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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 20-F

(Mark One)

☐ **REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2021

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from _____ to _____.

OR

☐ **SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
Date of event requiring this shell company report_____

Commission file number: 001-40210

Tuya Inc.

(Exact name of Registrant as specified in its charter)

N/A
(Translation of Registrant's name into English)

Cayman Islands
(Jurisdiction of incorporation or organization)

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Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol	Name of each exchange on which registered
American depositary shares, each ADS represents one Class A ordinary share, par value US$0.00005 per share	**TUYA**	**The New York Stock Exchange**
Class A ordinary shares, par value US$0.00005 per share*	**N/A**	**The New York Stock Exchange**

* Not for trading, but only in connection with the listing of the American depositary shares on the New York Stock Exchange.

Securities registered or to be registered pursuant to Section 12(g) of the Act:

None

(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:

None
(Title of Class)

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report.

571,246,560 ordinary shares, comprising 491,846,560 Class A ordinary shares, par value US$0.00005 per share (including 5,433,895 Class A ordinary shares issued to the depositary bank for bulk issuance of ADSs reserved for future issuances upon the exercise or vesting of awards granted under our 2015 Plan and 10,828,614 Class A ordinary shares represented by ADSs that have been repurchased by us from open market), and 79,400,000 Class B ordinary shares, par value US$0.00005 per share, as of December 31, 2021.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☐ No ☒

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer ☐ Accelerated Filer ☐ Non-accelerated Filer ☒ Emerging Growth Company ☒

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards † provided pursuant to Section 13(a) of the Exchange Act. ☐

† The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP ☒ International Financial Reporting Standards as issued by the International Accounting Standards Board ☐ Other ☐

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow. ☐ Item 17 ☐ Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

(APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PAST FIVE YEARS)

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Section 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court.

Yes ☐ No ☐

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INTRODUCTION

Except where the context otherwise requires and for the purpose of this annual report only:

- "ADSs" refers to the American depositary shares, each representing one Class A ordinary share;
- "CAC" refers to the Cyberspace Administration of China;
- "China" or "PRC" refers to the People's Republic of China, excluding, for the purpose of this annual report only, Taiwan, Hong Kong and Macau;
- "Class A ordinary share" refers to our Class A ordinary shares, par value US$0.00005 per share;
- "Class B ordinary share" refers to our Class B ordinary shares, par value US$0.00005 per share;
- "EMEA" refers to Europe, Middle-East and Africa;
- "Hangzhou Tuya Technology" refers to Hangzhou Tuya Technology Co., Ltd.;
- "IoT" refers to Internet of Things, the concept of connecting a large number of physical objects as well as the people using them to a large, interconnected network, turning everyday things into "smart" connected devices;
- "MAA" or "Articles" refers to the eighth amended and restated memorandum and articles of association of our company, currently effective;
- "NYSE" refers to the New York Stock Exchange;
- "PaaS" refers to platform as a service, a category of cloud computing services that provides a platform and environment to allow developers to build applications over the internet;
- "RMB" or "Renminbi" refers to the legal currency of the People's Republic of China;
- "SaaS" refers to software as a service, a cloud-based software licensing and delivery model in which software and associated data are centrally hosted and are available to end users over the internet;
- "SAFE" refers to State Administration of Foreign Exchange;
- "shares" or "ordinary shares" refer to our Class A and Class B ordinary shares, per value US$0.00005 per share;
- "Tuya," "we," "us," "our company," and "our" refer to Tuya Inc., a Cayman Islands company and its subsidiaries and, in the context of describing our operations and consolidated financial information, its consolidated variable interest entity, or VIE;
- "Tuya Information" refers to Hangzhou Tuya Information Technology Co., Ltd.;
- "US$," "dollars" or "U.S. dollars" refers to the legal currency of the United States; and

- "variable interest entity," or "VIE," refers to Hangzhou Tuya Technology, i.e. the PRC entity of which we have power to control the management, and financial and operating policies and have the right to recognize and receive substantially all the economic benefits and in which we have an exclusive option to purchase all or part of the equity interests at the minimum price possible to the extent permitted by PRC law.

Unless otherwise noted, all translations from Renminbi to U.S. dollars and from U.S. dollars to Renminbi in this annual report are made at RMB6.3726 to US$1.00, the exchange rate set forth in the H.10 statistical release of the Federal Reserve Board on December 30, 2021. We make no representation that any Renminbi or U.S. dollar amounts could have been, or could be, converted into U.S. dollars or Renminbi, as the case may be, at any particular rate, or at all.

FORWARD-LOOKING INFORMATION

This annual report contains statements that constitute forward-looking statements. Many of the forward-looking statements contained in this annual report can be identified by the use of forward-looking words such as "aim," "anticipate," "believe," "could," "estimate," "expect," "intend," "likely to," "may," "plan," "potential," "should" and "will" or other similar expressions.

Forward-looking statements appear in a number of places in this annual report and include, but are not limited to, statements regarding our intent, belief or current expectations. Forward-looking statements are based on our management's beliefs and assumptions and on information currently available to our management. Such statements are subject to risks and uncertainties, and actual results may differ materially from those expressed or implied in the forward-looking statements due to various factors, including, but not limited to, those identified under the section entitled "Item 3. Key Information—3.D. Risk Factors" in this annual report. These risks and uncertainties include factors relating to:

- general economic, political, demographic and business conditions in China and globally;
- our ability to implement our growth strategies;
- the success of operating initiatives, including advertising and promotional efforts and new product and service development by us and our competitors;
- our ability to develop and apply our technologies to support and expand our product and service offerings;
- our ability to compete and conduct our business in the future;
- the expected growth of the IoT PaaS and SaaS industries in China and globally;
- the availability of qualified personnel and the ability to retain such personnel;
- competition in the IoT PaaS and SaaS industries;
- the COVID-19 pandemic and government measures taken in response thereto;
- changes in government policies and regulations;
- other factors that may affect our financial condition, liquidity and results of operations; and
- other risk factors discussed under "Item 3. Key Information—3.D. Risk Factors."

Forward-looking statements speak only as of the date they are made, and we do not undertake any obligation to update them in light of new information or future developments or to release publicly any revisions to these statements in order to reflect later events or circumstances or to reflect the occurrence of unanticipated events.

PART I

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

Our Coporate Structure

Tuya Inc. is a Cayman Islands holding company and operates in China mainly through its PRC subsidiaries. It also conducts business internationally with local offices in the U.S., India, Germany, and Japan, among other locations.

Due to PRC restrictions on foreign ownership of telecommunication businesses, we currently conduct a de minimis portion of our business through the VIE incorporated in China. The VIE has historically accounted for an immaterial portion of our total revenues and assets. The revenues generated by the VIE contributed less than 0.1% of our total revenues in each of 2019 and 2020. The revenue contribution from the VIE was nil in 2021. As of December 31, 2020 and 2021, the assets of the VIE, excluding amounts due from other companies in our group, represented 0.16% and 0.01% of our consolidated total assets, respectively. We expect the contribution of revenues and assets to our group from the VIE to remain immaterial in the foreseeable future. Additionally, the VIE currently does not hold any licenses or permits that are material to our current business operations.

The VIE is owned by certain nominee shareholders, not us. All of these nominee shareholders are also beneficial owners of the Company. Investors in our ADSs are purchasing equity securities of a Cayman Islands holding company rather than equity securities issued by our subsidiaries or the VIE. Investors who are non-PRC residents may never directly hold equity interests in the VIE under current PRC laws and regulations. As used in this annual report, “we,” “us,” “our company,” “our,” or “Tuya” refers to Tuya Inc. and its subsidiaries, and, in the context of describing our consolidated financial information, business operations and operating data, our consolidated VIE, “Tuya Information” refers to Hangzhou Tuya Information Technology Co., Ltd., and “Hangzhou Tuya Technology” refers to Hangzhou Tuya Technology Co., Ltd. We refer to Tuya Information as the PRC subsidiary in the context of describing of its activities. We refer to Hangzhou Tuya Technology as the VIE in the context of describing its activities and contractual arrangements with us.

Our corporate structure involves unique risks to investors in the ADSs. Our contractual arrangements with the VIE have not been tested in court. If the PRC government deems that our contractual arrangements with the VIE do not comply with PRC regulatory restrictions on foreign investment in the relevant industries, or if these regulations or the interpretation of existing regulations change in the future, we could be subject to penalties or be forced to relinquish our interests in those operations or otherwise significantly change our corporate structure. We and our investors face significant uncertainty about potential future actions by the PRC government that could affect the legality and enforceability of the contractual arrangements with the VIE and, consequently, negatively affect our ability to consolidate the financial results of the VIE and the financial performance of our company as a whole. Our ADSs may decline in value or become worthless if we are unable to effectively enforce our contractual control rights over the assets and operations of the VIE. See “Item 3. Key Information—3.D. Risk Factor—Risks Related to Our Corporate Structure” for a detailed discussion of the risks as a result of our VIE structure.

For a detailed discussion of our organizational structure and how funds and other assets are transferred through our organization, see ““Item 4. Information on the Company—4.C. Organizational Structure.”

We also face various legal and operational risks and uncertainties related to doing business in China. For example, we face risks associated with regulatory approvals of offshore offerings, anti-monopoly regulatory actions, cybersecurity and data privacy, as well as the lack of inspection from the U.S. Public Company Accounting Oversight Board, or PCAOB, on our auditors. The PRC government has authority to regulate and exert influence on companies operating in the PRC, including their ability to conduct business, accept foreign investments or be listed on foreign stock exchanges. The PRC government may also intervene with or influence our operations as the government deems appropriate to further regulatory political and societal goals, among other things, which could result in an adverse impact on our operations and/or value of the ADSs. The PRC government has recently published new policies that have significantly impacted our industry and we cannot rule out the possibility that it will in the future further release regulations or policies regarding our industry, including those that may have adverse impacts on our business, financial condition and results of operations. These actions may cause the value of such securities to significantly decline or in extreme cases, become worthless. For a more detailed discussion of these risks, see "Item 3. Key Information—3.D. Risk Factors—Risks Related to Doing Business in China" and "Item 3. Key Information—3.D. Risk Factors—Risks Related to Our Corporate Structure."

Recent PRC Regulatory Developments

Cybersecurity Review

On December 28, 2021, the CAC and several other administrations jointly promulgated the Measures for Cybersecurity Review (the "Cybersecurity Review Measures"), which became effective on February 15, 2022. The Cybersecurity Review Measures provide that (i) a "network platform operator" holding over one million users' personal information shall apply for a cybersecurity review when listing their securities "in a foreign country", (ii) a critical information infrastructure operator (the "CIIO") that intends to purchase internet products and services that affect or may affect national security shall apply for a cybersecurity review, and (iii) a "network platform operator" carrying out data processing activities that affect or may affect national security shall apply for a cybersecurity review. Since the Cybersecurity Review Measures are relatively new, significant uncertainties exist in relation to their interpretation and implementation. Additionally, the Cybersecurity Review Measures do not provide the exact scope of "network platform operator" or the circumstances that would "affect or may affect national security." As a result, there can be no assurance that we will not be required to apply for a cybersecurity review pursuant to the Cybersecurity Review Measures. To the extent any cybersecurity review is required, we cannot assure you that we will be able to complete it in a timely manner, or at all. Any failure to complete the required cybersecurity review may result in administrative penalties, including fines, a shut-down of our business, revocation of requisite licenses, as well as reputational damage or legal proceedings or actions against us, which may have material adverse effects on our business, financial condition and results of operations. See "Item 3. Key Information—3.D. Risk Factors—Compliance with the rapidly evolving landscape of global data privacy and data security laws may be challenging, and any failure or perceived failure to comply with such laws, or other concerns about our practices or policies with respect to the processing of personal information, could damage our reputation and deter current and potential customers and end users from using our platform and products and services or subject us to significant compliance costs or penalties, which could materially and adversely affect our business, financial condition and results of operations."

Potential CSRC Approval Required for Issuance and Listing of Securities Overseas

On December 24, 2021, the CSRC published the draft Regulations of the State Council on the Administration of Overseas Issuance and Listing of Securities by Domestic Companies (Draft for Comments))(the "Administrative Provisions") and the draft Measures for the Record-Filing of Overseas Issuance and Listing of Securities by Domestic Companies (Draft for Comments) (the "Filing Measures") for public comments. Pursuant to these drafts, "PRC domestic companies" that directly or indirectly issue or list their securities overseas shall file with CSRC certain required documents within three business days after submitting the application documents for the issuance or listing overseas, and "PRC domestic companies" are defined to include both (i) PRC companies limited by shares, and (ii) offshore-incorporated companies whose main business operations are in China that seek issuance of shares and listing overseas based on their onshore equity, assets or similar interests. As of the date of this annual report, it remains uncertain when the final Administrative Provision and Filing Measures will be adopted and whether they will be adopted in the current draft form. If the Administrative Provisions and Filing Measures are adopted in the current form, we may be required to file required documents with the CSRC regarding our future securities offerings, which could take up to 20 business days for the CSRC to review and approve after submitting all required documents. See "Item 3. Key Information—3.D. Risk Factors—The filing, approval or other administration requirements of the CSRC, the CAC or other PRC government authorities may be required to maintain our listing status or conduct future offshore securities offerings."

3.A. [Reserved]

3.B. Capitalization and Indebtedness

Not applicable.

3.C. Reason for the Offer and Use of Proceeds

Not applicable.

3.D. Risk Factors

Below please find a summary of the principal risks we face, organized under relevant headings.

Risks Related to Our Business and Industry

- We operate in an emerging and evolving market, which may develop differently from or more slowly than we expect. If our market does not grow as we expect, or if we cannot expand our products and services to meet the demands of this market, our revenues may decline, or fail to grow, and we may continue to incur operating losses.
- We have a limited operating history, making it difficult to forecast our future results of operations.
- Our recent growth may not be indicative of our future growth, and we may not be able to sustain our revenue growth rate in the future.
- The markets in which we operate are competitive, and if we do not compete effectively, our business, operating results and financial condition could be harmed.
- The success of our business is dependent upon our ability to maintain and expand our customer base and our ability to convince our customers to increase the use of our products and services. If we are unable to expand our customer base, or if the use of our products and services by our customers declines, our business may be harmed.
- If we fail to estimate customer demand properly, our financial results could be harmed.

- Our use of third-party suppliers involves certain risks that may result in, among others, increased costs, disruption of supply or shortage of raw materials quality or compliance issues, or failure by our suppliers to timely manufacture the modules and finished smart devices, any of which could materially harm our business.

- If we are not able to introduce new features or products successfully or to make enhancements to our existing products and services, our business and results of operations could be adversely affected.

- We rely upon third-party providers of cloud-based infrastructure to host our platform. Any disruption in the operations of these third-party providers, limitations on capacity or interference with our use could adversely affect our business, financial condition and results of operations.

- We benefit from integration of our products and services with those of our business partners. If these business partners choose not to partner with us in the future, our business and results of operations may be harmed.

Risks Related to Our Corporate Structure

- If the PRC government finds that the agreements that establish the structure for operating some of our operations in China do not comply with PRC regulations relating to the relevant industries, or if these regulations or the interpretation of existing regulations change in the future, we could be subject to severe penalties or be forced to relinquish our interests in those operations.

- We rely on contractual arrangements with the VIE and its respective shareholders to use, or otherwise benefit from, certain licenses and approvals we may need in the future, which may not be as effective as direct ownership in providing operational control and could adversely affect our business, operating results and financial condition.

- Any failure by the VIE or its shareholders to perform their obligations under our contractual arrangements with them would have an adverse effect on part of our business.

- The registered shareholders of the VIE may have potential conflicts of interest with us, which may adversely affect part of our business.

- Contractual arrangements we have entered into with the VIE may be subject to scrutiny by the PRC tax authorities. A finding that we owe additional taxes could negatively affect our financial condition and the value of your investment.

- We may lose the ability to use and benefit from assets held by the VIE that could be material or supplementary to the operation of our business if the VIE goes bankrupt or becomes subject to dissolution or liquidation proceeding.

- Substantial uncertainties exist with respect to the interpretation and implementation of the newly enacted Foreign Investment Law and how it may impact the viability of our current corporate structure, corporate governance and operations.

Risks Related to Doing Business in China

- A severe or prolonged downturn in the PRC or global economy could materially and adversely affect our business, results of operations and financial condition.

- Changes in China's economic, political or social conditions or government policies could have a material adverse effect on our business, financial condition and results of operations.

- We are exposed to risks associated with international relations and geopolitical risks.

- The uncertainties in the PRC legal system could materially and adversely affect us.
- You may experience difficulties in effecting service of legal process, enforcing foreign judgments or bringing actions in China against us or our management based on foreign laws.
- We may rely on dividends and other distributions on equity paid by our PRC subsidiaries to fund any cash and financing requirements we may have, and any limitation on the ability of our PRC subsidiaries to make payments to us could have a material and adverse effect on our ability to conduct our business.
- The filing, approval or other administration requirements of the CSRC, the CAC or other PRC government authorities may be required to maintain our listing status or conduct future offshore securities offerings.
- The PCAOB is currently unable to inspect our auditor in relation to their audit work performed for the audit report included in our annual report filed with the SEC and the inability of the PCAOB to conduct inspections over our auditor deprives our investors with the benefits of such inspections.
- Our ADSs will be prohibited from trading in the United States under the Holding Foreign Companies Accountable Act, or the HFCAA, in 2024, if the PCAOB is unable to inspect or fully investigate auditors located in China, or 2023, if proposed changes to the law are enacted. The delisting of our ADSs, or the threat of their being delisted, may materially and adversely affect the value of your investment.

Risks Related to Our ADSs

- The price and trading volume of our ADSs may be volatile, which could lead to substantial losses to investors.
- The concentration of our shares' voting power limited our shareholders' ability to influence corporate matters.
- Holders of the ADSs may not have the same voting rights as the holders of our Class A Ordinary Shares and may not be able to exercise their right to direct how our Class A Ordinary Shares represented by the ADSs are voted.
- Our dual-class voting structure may render our securities ineligible for inclusion in certain stock market indices, and thus adversely affect the trading price and liquidity of our ADSs.
- If securities or industry analysts do not publish research or reports about our business, or if they adversely change their recommendations regarding our securities, the market price for our ADSs and trading volume could decline.
- Substantial future sales or perceived sales of our ADSs could materially and adversely affect their market price.
- Techniques employed by short sellers may drive down the market price of our ADSs.
- Because we do not expect to pay dividends in the foreseeable future, you must rely on a price appreciation of our ADSs for a return on your investment.
- You may face difficulties in protecting your interests, and your ability to protect your rights through U.S. courts may be limited, because we are incorporated under Cayman Islands law.
- It may be difficult for overseas regulators to conduct investigations or collect evidence within China.

Risks Related to Our Business and Industry

We operate in an emerging and evolving market, which may develop differently from or more slowly than we expect. If our market does not grow as we expect, or if we cannot expand our products and services to meet the demands of this market, our revenues may decline, or fail to grow, and we may continue to incur operating losses.

The IoT PaaS and IoT SaaS markets are at an early stage of development. There is considerable uncertainty over the size and rate at which these markets will grow, as well as whether our products and services will be widely adopted. Moreover, the IoT cloud industry, including the IoT PaaS market and the IoT SaaS market, is subject to rapid technological change, evolving industry standards, changing regulations, as well as changing customer needs, requirements and preferences. The success of our business will depend, in part, on our ability to adapt and respond effectively to these changes on a timely basis. If we are unable to develop and launch new products and services or provide enhancements and new features to keep pace with rapid technological and industry changes, our business, results of operations and financial condition could be adversely affected. If new technologies emerge that are able to deliver competitive products and services at lower prices or more efficiently or securely, such technologies could adversely impact our ability to compete effectively.

Our products, services and platform must also integrate with a variety of network, hardware, software and technologies, and we need to continuously modify and enhance our products, services and platform to adapt to changes and innovation. For example, if customers adopt new software, we may be required to develop new versions of our products and services to be compatible with such new software. This development effort may require significant resources, which would adversely affect our business, results of operations and financial condition. Any failure of our products and services to operate effectively with evolving or new software and technologies could reduce the demand for our products and services. If we are unable to respond to these changes in a cost-effective manner, our products and services may become less marketable and less competitive or obsolete, and our business, results of operations and financial condition could be adversely affected.

We have a limited operating history, making it difficult to forecast our future results of operations.

We commenced our operations in 2014. Our relatively limited operating history makes it difficult to evaluate our current business and prospects, and to plan for our anticipated future growth. As a result of our limited operating history, our ability to accurately forecast our future results of operations is limited and subject to a number of uncertainties, including our ability to plan for and model future growth. Our historical revenue growth should not be considered indicative of our future performance.

Further, in future periods, our revenue growth could slow down or our revenues could decline for a number of reasons, including slowing demand for our offerings, increased competition, changes to technology, a decrease in the growth of our overall market, or our failure, for any reason, to continue to take advantage of growth opportunities. We have also encountered, and will continue to encounter, risks and uncertainties frequently experienced by growing companies in rapidly changing industries. If our assumptions regarding these risks and uncertainties and our future revenue growth are incorrect, or if we do not address these risks successfully, our operating and financial results could differ materially from our expectations, and our business could suffer.

Our recent growth may not be indicative of our future growth, and we may not be able to sustain our revenue growth rate in the future.

We have experienced rapid growth since the inception of our operations. Our revenues increased by 70.0% from approximately US$105.8 million for 2019 to approximately US$179.9 million for 2020 and further increased by 67.9% to approximately US$302.1 million for 2021. However, you should not rely on the revenue growth of any prior quarterly or annual period as an indication of our future performance. We cannot assure you that we will be able to manage our growth at the same rate as we did in the past, or avoid any decline in the future. To maintain our growth, we need to attract more customers, hire more qualified research and development, or R&D, staff and other staff, scale up our business and strengthen our technology infrastructure, among others. Moreover, our current and planned staffing, systems, policies, procedures and controls may not be adequate to support our future operations. To effectively manage the expected growth of our operations and personnel, we will also be required to refine our operational, financial and management controls and reporting systems and procedures. If we fail to efficiently manage the expansion of our business, our costs and expenses may increase faster than we planned and we may not successfully attract a sufficient number of customers and end users in a cost-effective manner, respond timely to competitive challenges, or otherwise execute our business strategies. Our growth requires significant financial resources and will continue to place significant demands on our management. There is no guarantee that we will be able to effectively manage any future growth in an efficient, cost-effective and timely manner, or at all. Our growth in a relatively short period of time is not necessarily indicative of results that we may achieve in the future. If we fail to effectively manage the growth of our business and operations, our reputation, results of operations and overall business and prospects could be negatively impacted.

The markets in which we operate are competitive, and if we do not compete effectively, our business, operating results and financial condition could be harmed.

The IoT PaaS and IoT SaaS markets are competitive and rapidly evolving. The principal competitive factors in these markets include ability to support multiple use cases on a single platform, ease of deployment, implementation and use, platform performance, scalability and reliability, global reach, brand awareness and reputation, the strength of sales and marketing efforts, as well as ability to ensure data security and privacy.

Some of our existing and potential competitors might have substantial competitive advantages, including larger scale, longer operating history, greater brand recognition, more established relationships with customers, suppliers, manufacturers and other business partners, and greater financial, research and development, marketing and other resources. As a result, our competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards or customer requirements. In addition, some competitors may offer products or services that address one or a limited number of functions at lower prices, with greater depth than our products and services or in different geographies. Our existing and potential competitors may develop and market new products and services with comparable functionality to ours, and this could force us to offer our products and services at lower prices in order to remain competitive.

Some of our competitors are able to offer products and services at lower prices than ours, which may be attractive to certain customers even if those products and services offer different or fewer functionalities. If we are unable to maintain our current pricing due to the competitive pressures, our margins will be reduced and our business, results of operations and financial condition would be adversely affected. In addition, pricing pressures and increased competition could result in reduced revenues, reduced margins, increased losses or the failure of our products and services to achieve or maintain widespread market acceptance, any of which could harm our business, results of operations and financial condition.

With the introduction of new products and services and new market entrants, we expect competition to intensify in the future. In addition, some of our customers may choose to use our products and services and our competitors' products and services at the same time, or choose to switch to other IoT platforms. As we expand the scope of our platform, products and services, we may face additional competition. If one or more of our competitors were to merge or partner with another of our competitors, the change in the competitive landscape could also adversely affect our ability to compete effectively.

The success of our business is dependent upon our ability to maintain and expand our customer base and our ability to convince our customers to increase the use of our products and services. If we are unable to expand our customer base, or if the use of our products and services by our customers declines, our business may be harmed.

Our ability to expand and generate revenues depends, in part, on our ability to maintain and expand our relationships with customers and convince them to increase their use of our products and services. We grew our total number of customers from approximately 3,300 in 2019, to approximately 5,000 in 2020, and further to approximately 8,400 in 2021. Our IoT PaaS customers increased from approximately 2,300 in 2019 to approximately 3,300 in 2020, and further to approximately 5,500 in 2021. If our customers do not increase their use of our products and services, our revenues may not grow and our results of operations may be harmed. It is difficult to predict the end users' usage levels of smart devices accurately and the loss of customers or reductions in the end users' usage levels may have a negative impact on our business, results of operations, and financial condition. Our customers may cease, or reduce their usage of our products and services due to a variety of reasons or factors, such as progress in technology that makes our products and services obsolete, a decrease in the quality of our products and services, unfounded allegations and rumors relating to the health effect of technologies such as 5G, or national security or other concerns caused by our products and services, rising raw material prices, and shortage of semiconductor components, which are outside our or our customers' control. If a significant number of our customers cease using, or reduce their usage of, our products and services, or if the brands who place orders through our OEM customers cease to place orders from them, we may be required to spend significantly more on sales and marketing than we currently plan to spend in order to maintain or increase revenues. These additional expenditures could adversely affect our business, results of operations, and financial condition.

If we fail to estimate customer demand properly, our financial results could be harmed.

Our products are manufactured based on estimates of customers' future demand. There may be a significant mismatch between supply and demand, giving rise to product shortages or excess inventory, and make our demand forecast more uncertain. Demand for our products and services is based on many factors, including our product introductions, competitor announcements, competing technologies, and power or raw material supply, among other things, many of which are beyond our or our customers' control. For example, the demand and use of the chips as part of the modules where the edge capabilities of IoT PaaS are embedded have fluctuated in the past and is likely to continue to fluctuate in the future. In periods with limited supply of chips, our customers may place inventory orders significantly in advance of their normal order cycle, which could increase fluctuations in our sales and revenues between periods and make it more difficult for us to estimate future customer demands. These challenges may be more pronounced in the future if the demand and prices of chips continue to fluctuate. In addition, to the extent our customers experience material changes in the sale of their smart devices, they may reduce purchases of our products and services, causing our estimate of customer demand to be inaccurate. In estimating demand, we make multiple assumptions, any of which may prove to be incorrect. Furthermore, to the extent we build inventory anticipating growth in customer demand, our business, results of operations, and financial condition may be negatively affected if such growth does not materialize as expected.

Our use of third-party suppliers involves certain risks that may result in, among others, increased costs, disruption of supply or shortage of raw materials quality or compliance issues, or failure by our suppliers to timely manufacture the modules and finished smart devices, any of which could materially harm our business.

We use third-party suppliers to manufacture the modules where edge capabilities of IoT PaaS are embedded, and in some circumstances, finished smart devices. We do not manufacture these modules or smart devices and do not own or operate any manufacturing facility. Instead, we are dependent on third-party suppliers to manufacture the modules and smart devices using their equipment and technology. Our use of such third-party module suppliers involves a number of risks, including:

- insufficient capacity or delays in meeting our demand;
- inadequate manufacturing yields, inferior quality and excessive costs;
- failure by our suppliers to manufacture products that meet the agreed upon specifications;

- failure by our suppliers to procure raw materials on commercially reasonable terms, or at all, or to provide or allocate adequate, or any, manufacturing or other capacity for our products;
- failure by our suppliers to obtain an adequate supply of materials at commercially reasonable terms;
- limited warranties on products supplied to us;
- inability to comply with our contractual obligations;
- potential increases in prices;
- a lack of direct control over delivery schedules or product quantity and quality;
- delays in product shipment, shortages, a decrease in product quality and/or higher expenses;
- increased exposure to potential misappropriation of our intellectual property; and
- disruptions to supply chain, manufacturing process and business operation due to the COVID-19 pandemic.

If any of our suppliers is not able to perform its manufacturing obligations in the manner, timing and quality as agreed, we may not be able to, on a timely basis, find a suitable alternative on commercially acceptable terms. Disruptions of our relationships with such suppliers could negatively impact our business operations for an extended period of time. Any inability to acquire sufficient quantities of the modules and finished smart devices in a timely manner from these third-party suppliers could have a material negative impact on our business.

Components of IoT modules and other raw materials used in our operations are periodically subject to supply shortages, and our business is subject to the risk of price increases and periodic delays in delivery. For example, since early 2021, there have been continued global supply chain disruptions, and the supply of chips that are essential components of IoT modules has been subject to a global shortage. While we believe such chip shortage has not had a material negative impact on our business operations to date, there is no assurance that we will be able to continue to secure adequate chip supply at commercially reasonable cost for our operations. If we fail to secure sufficient chip supply, we may have to secure alternative suppliers or find alternative supplies or technologies, which could be costly, time consuming, and may not be successful. To the extent the chip shortage deteriorates or becomes longer-term in nature, we may experience significant delays in our delivery to customers and our business operations and prospects may be negatively impacted.

If we are not able to introduce new features or products successfully or to make enhancements to our existing products and services, our business and results of operations could be adversely affected.

To attract new customers and end users and keep our existing ones engaged, we must introduce new products and services and upgrade our existing offerings to meet their evolving preferences. It is difficult to predict the preferences of a particular customer or a specific group of customers. Changes and upgrades to our existing products may not be well received by our customers and end users, and newly introduced products or services may not achieve success as expected. For example, we may introduce new industry SaaS products for new industry verticals, with which we have little or no prior experience. Such efforts may require us to contribute a substantial amount of additional human capital and financial resources. We cannot assure you that any of such new products will achieve market acceptance or generate sufficient revenues to adequately compensate the costs and expenses incurred in relation to our development and promotion efforts. Enhancements and new products and services that we develop may not be introduced in a timely or cost-effective manner, may contain errors or defects, may have interoperability difficulties with our platform or other products and services or may not achieve the broad market acceptance necessary to generate significant revenues. If we fail to improve our existing products and introduce new ones in a timely or cost-effective manner, our ability to attract and retain customers and end users may be impaired, and our financial performance and prospects may be adversely affected.

We rely upon third-party providers of cloud-based infrastructure to host our platform. Any disruption in the operations of these third-party providers, limitations on capacity or interference with our use could adversely affect our business, financial condition and results of operations.

We currently serve our customers and end users from data centers in China, the United States, Europe and India. We also use various third-party cloud-hosting providers such as AWS, Microsoft Azure and Tencent Cloud to provide cloud infrastructure for our platform. Our IoT PaaS and Industry SaaS products and value-added services rely on the operations of this infrastructure. We do not control, or in some cases have limited control over, the operation of the data center facilities we use. Customers expect to access our platform at any time, without interruption or degradation of performance, and we provide a few customers with service-level commitments with respect to uptime. Any limitation on the capacity of our data centers or cloud infrastructure could impede our ability to onboard new customers or expand the usage of our existing customers, host our products or serve our customers, which could adversely affect our business, financial condition and results of operations. In addition, any incident affecting our data centers or cloud infrastructure that may be caused by cyber-attacks, natural disasters, fire, flood, severe storm, earthquake, power loss, outbreaks of contagious diseases, telecommunications failures, terrorist or other attacks, or other events beyond our control could negatively affect the cloud-based portion of our platform. A prolonged service disruption affecting our data centers or cloud-based services for any of the foregoing reasons would negatively impact our ability to serve our customers and could damage our reputation with current and potential customers, expose us to liability, cause us to lose customers or otherwise harm our business. We may also incur significant costs for using alternative providers or taking other actions in preparation for, or in response to, events that damage the third-party hosting services we use.

In the event that our service agreements relating to our data centers or cloud infrastructure are terminated, or there is a lapse of service, elimination of services or features that we utilize, interruption of internet service provider connectivity or damage to such facilities, we could experience interruptions in access to our platform, as well as significant delays and additional expense in arranging or creating new facilities and services or re-architecting our platform for deployment on a different data center provider or cloud infrastructure service provider, which could adversely affect our business, financial condition and results of operations.

We benefit from integration of our products and services with those of our business partners. If these business partners choose not to partner with us in the future, our business and results of operations may be harmed.

We benefit from integration of our products and services with those of our business partners, such as the providers of cloud services used to support our platform. If entities who serve as our business partners change their cooperation model with us, our business, results of operations and financial condition may be adversely affected. We may also face competition from our business partners in a number of areas, including innovations in our businesses. Such competition may adversely affect our competitive position, business prospects and our relationship with our business partners. It may be necessary in the future to renegotiate agreements relating to various aspects of these collaborations or business partnerships. In addition, if our business partners choose not to partner with us, or choose to form collaborations with our competitors' platforms, our business, financial condition and results of operations could be harmed.

Compliance with the rapidly evolving landscape of global data privacy and data security laws may be challenging, and any failure or perceived failure to comply with such laws, or other concerns about our practices or policies with respect to the processing of personal information, could damage our reputation and deter current and potential customers and end users from using our platform and products and services or subject us to significant compliance costs or penalties, which could materially and adversely affect our business, financial condition and results of operations.

Failure to comply with the increasing number of data protection laws in the jurisdictions in which we operate, as well as concerns about our practices with regard to the collection, use, storage, retention, transfer, disclosure and other processing of personal information, the security of personal information, the use of biometric information or other privacy-related matters, such as cybersecurity breaches, misuse of personal information and data sharing without necessary safeguards, including concerns from our customers, employees and third parties with whom we conduct business, even if unfounded, could damage our reputation and operating results. As we seek to expand our business, we are, and may increasingly become, subject to various laws, regulations and standards, as well as contractual obligations, relating to data privacy and security in the jurisdictions in which we operate. The regulatory and legal frameworks regarding data privacy and security issues in many jurisdictions are constantly evolving and developing and can be subject to significant changes from time to time, including in ways that may result in conflicting requirements among various jurisdictions. Interpretation and implementation standards and enforcement practices are similarly in a state of flux and are likely to remain uncertain for the foreseeable future. As a result, we may not be able to comprehensively assess the scope and extent of our compliance responsibility at a global level, and may fail to fully comply with the applicable data privacy and security laws, regulations and standards. Moreover, these laws, regulations and standards may be interpreted and applied differently over time and from jurisdiction to jurisdiction, and it is possible that they will be interpreted and applied in ways that may have a material and adverse impact on our business, financial condition and results of operations.

PRC

- In recent years, the PRC government has increasingly tightened the regulation of cybersecurity and the storage, sharing, use, disclosure and protection of data and personal information. The Cybersecurity Law of the PRC (the "Cybersecurity Law") promulgated by the Standing Committee of the National People's Congress (the "SCNPC"), has come into force on June 1, 2017. In addition, the Data Security Law of PRC (the "Data Security Law") was promulgated by the SCNPC on June 10, 2021 and took effect on September 1, 2021.

- Numerous laws, regulations, guidelines and other measures have been or are expected to be adopted pursuant to the guidelines of, or in addition to, the Cybersecurity Law and Data Security Law. These include, for example, the draft Measures on Security Assessment of Cross-Border Transfer of Personal Information and Important Data released in April 2017, the draft Measures on Security Assessment of Cross-Border Transfer of Personal Information released in June 2019, and the Personal Information Protection Law (the "Personal Information Protection Law"), which was released on August 20, 2021 and became effective on November 1, 2021. Specifically, on October 29, 2021, the CAC released the consultation draft of the Cross-border Transfer of Data, which is applicable to cross-border transfers of personal information and important data collected and generated in China under certain circumstances. While we do not believe our current business involves any transmission, use and exchange of information that comes under the definition of "cross-border transfers of personal information and important data" under the foregoing laws and regulations, we cannot assure you that the PRC regulatory authorities will not take a view contrary to ours, thus requiring us to comply with applicable data localization, security assessment and other requirements under these proposed laws and regulations. As our business continues to grow, there may arise circumstances where we engage in such cross-border transfers of personal information and important data, including in order to satisfy the legal and regulatory requirements, in which case we may need to comply with the foregoing requirements as well as any other limitations under PRC laws then applicable. Complying with these laws and requirements could cause us to incur substantial expenses or require us to alter or change our practices in ways that could harm our business. Additionally, to the extent we are found to be not in compliance with these laws and requirements, we may be subject to fines, regulatory orders to suspend our operations or other regulatory and disciplinary sanctions, which could materially and adversely affect our business, financial condition and results of operations.

- On July 30, 2021, the State Council of the PRC promulgated the Provisions on Protection of Critical Information Infrastructure (the "CII Protection Regulations"), which became effective on September 1, 2021. Pursuant to the CII Protection Regulations, "critical information infrastructures," or "CIIs," refer to any important network facilities or information systems of the important industry or field such as public communication and information service, energy, communications, water conservation, finance, public services, e-government affairs and national defense science, which may endanger national security, people's livelihood and public interest in case of damage, function loss or data leakage. In addition, relevant administration departments of each critical industry and sector shall be responsible for formulating eligibility criteria and identifying the CII operators, or CIIOs, in the respective industry or sector, and the CIIOs shall be responsible for protecting the CIIs' security by performing certain prescribed obligations. As of the date of this annual report, we have not been informed by CAC or any other PRC government authorities that we are identified or will be deemed as a CIIO. However, since the criteria for determining CIIOs remain uncertain, we cannot assure you that we will not be identified as a CIIO by any competent regulatory authority in the future.

- On December 28, 2021, the CAC and several other administrations jointly promulgated the Measures for Cybersecurity Review (the "Cybersecurity Review Measures"), which became effective on February 15, 2022. The Cybersecurity Review Measures provide that (i) a "network platform operator" holding over one million users' personal information shall apply for a cybersecurity review when listing their securities "in a foreign country", (ii) a CIIO that intends to purchase internet products and services that affect or may affect national security shall apply for a cybersecurity review, and (iii) a "network platform operator" carrying out data processing activities that affect or may affect national security shall apply for a cybersecurity review. Since the Cybersecurity Review Measures are relatively new, significant uncertainties exist in relation to their interpretation and implementation. Additionally, the Cybersecurity Review Measures do not provide the exact scope of "network platform operator" or the circumstances that would "affect or may affect national security." There can be no assurance that we will not be required to apply for a cybersecurity review pursuant to the Cybersecurity Review Measures. To the extent any cybersecurity review is required, we cannot assure you that we will be able to complete it in a timely manner, or at all. Any failure to complete the required cybersecurity review may result in regulatory sanctions including, among others, government enforcement actions and investigations, fines, penalties, and suspension of our non-compliant operations, as well as reputational damage or legal proceedings or actions against us, any of which may have material adverse effects on our business, financial condition and results of operations.

- In addition, on November 14, 2021, the CAC commenced to publicly solicit comments on the Regulations on the Administration of Cyber Data Security (Draft for Comments) (the "Draft Cyber Data Security Regulation"). The Draft Cyber Data Security Regulation has not been officially enacted as of the date of this annual report. According to the Draft Cyber Data Security Regulation, data processors shall apply for a cybersecurity review when carrying out the following activities: (i) the merger, reorganization or division of internet platform operators that have acquired a large number of data resources related to national security, economic development or public interests, which affect or may affect national security; (ii) data processors that handle personal information of more than one million people contemplating to list its securities on a "foreign" stock exchange; (iii) data processors contemplating to list its securities on a stock exchange in Hong Kong, which affects or may affect national security; and (iv) other data processing activities that affect or may affect national security. According to the PRC National Security Law, "national security" refers to a status in which the regime, sovereignty, unity, territorial integrity, welfare of the people, sustainable economic and social development, and other vital interests of the state are relatively not in danger and not threatened internally or externally and the ability to maintain a sustained security status. However, the criteria for determining the circumstances that "affect or may affect national security" for the purpose of the Draft Cyber Data Security Regulation remain unclear and are subject to further clarification by the CAC. It also remains uncertain when the Draft Cyber Data Security Regulation will be adopted and become effective and whether it will be adopted in its current draft form. It remains uncertain whether future regulatory changes would impose additional restrictions on us. We cannot predict the impact of the Draft Cyber Data Security Regulation, if any, at this stage, and we will closely monitor and assess any development in the rulemaking process. If the enacted version of the Draft Cyber Data Security Regulation mandates clearance of a cybersecurity review and other specific actions to be completed by China-based companies listed on a foreign stock exchange like us, we face uncertainties as to whether such clearance can be timely obtained, or at all.

EU

- The General Data Protection Regulation (EU) 2016/679 ("GDPR"), which applies to the collection, use, storage, retention, transfer, disclosure and other processing of personal data obtained from individuals located in the European Union ("EU") or by businesses operating within the EU, became effective on May 25, 2018 and has resulted, and will continue to result, in significantly greater compliance burdens and costs for companies with customers, end users, or operations in the EU. The GDPR places stringent obligations and operational requirements on us as both a processor and controller of personal data and could make it more difficult or more costly for us to use and share personal data. Under the GDPR, data protection supervisory authorities are given various enforcement powers, including levying fines of up to 20 million Euros or up to 4% of an organization's annual worldwide turnover, whichever is greater, for the preceding financial year, for non-compliance. Data subjects also have the right to be compensated for damages suffered as a result of a controller or processor's non-compliance with the GDPR. While the GDPR provides a more harmonized approach to data protection regulation across the EU member states, it also gives EU member states certain areas of discretion and therefore laws and regulations in relation to certain data processing activities may differ on a member state by member state basis, which could further limit our ability to use and share personal data and could require localized changes to our operating model. In addition to the GDPR, the EU also has released a proposed Regulation on Privacy and Electronic Communications, or the ePrivacy Regulation, to replace the EU's current Privacy and Electronic Communications Directive, or the ePrivacy Directive, to, among other things, better align EU member states and the rules governing online tracking technologies and electronic communications, such as unsolicited marketing and cookies, with the requirements of the GDPR. While the ePrivacy Regulation was originally intended to be adopted on May 25, 2018 (alongside the GDPR), it is currently going through the European legislative process, and commentators now expect it to be adopted between 2022 and 2023. The current draft of the ePrivacy Regulation significantly increases fining powers to the same levels as GDPR and may require us to change our operational model and incur additional compliance expenses. Since trilogue negotiations among the Council of the European Union, the European Parliament and the European Commission are still ongoing, the details of this regulation remain in flux. Additional time and effort may need to be spent addressing the new requirements in the potential ePrivacy Regulation as compared to the GDPR.

- Under the GDPR, restrictions are placed on transfers of personal data outside of the European Economic Area to countries which have not been deemed "adequate" by the European Commission (including the United States and the PRC). As a global business, with customers and end users worldwide, we are susceptible to any changes in legal requirements affecting international data flows. The Court of Justice of the European Union ("CJEU") issued a decision on July 16, 2020, invaliding the EU-US Privacy Shield Framework, which provided one mechanism for lawful cross-border transfers of personal data between the EU and the U.S. While the decision did not invalidate the use of standard contractual clauses, another mechanism for making lawful cross-border transfers, the decision has called the validity of standard contractual clauses into question under certain circumstances, and has made the legality of transferring personal data from the EU to the U.S. or various other jurisdictions outside of the EU more uncertain.

- Specifically, the CJEU stated that companies must now assess the validity of standard contractual clauses on a case by case basis, taking into consideration whether the standard contractual clauses provide sufficient protection in light of any access by the public authorities of the third country to where the personal data is transferred, and the relevant aspects of the legal system of such third country. While the European Commission recently published new standard contractual clauses for transferring personal data from the EU to third countries, and the European Data Protection Board issued certain recommendations relating to measures that supplement transfer tools to ensure compliance with the EU level of protection of personal data, the CJEU's decision has increased uncertainty surrounding data transfers from the EU to third countries that may not offer the same level of protection for data subjects' rights as the EU. Due to these recent regulatory changes and guidance, we may need to invest in additional technical, legal and organization safeguards in the future to avoid disruptions to data flows within our business and to and from our customers and service providers. Furthermore, this uncertainty, and its eventual resolution, may increase our costs of compliance, impede our ability to transfer data and conduct our business, and harm our business or results of operations.

United States

- In the United States, various federal regulators, including governmental agencies like the Federal Trade Commission, and states and state regulators, including in California, Colorado, Virginia and Illinois, have adopted, or are considering adopting, laws and regulations concerning personal data and data security, such as the California Consumer Privacy Act ("CCPA"), the Colorado Privacy Act, the Virginia Consumer Data Protection Act, the California Internet of Things Security Law and the Illinois Biometric Information Privacy Act. This patchwork of legislation and regulation may give rise to conflicts or differing views of personal privacy rights. For example, certain state laws may be more stringent or broader in scope, or offer greater individual rights, with respect to personal data than federal, international or other state laws, and such laws may differ from each other, all of which may complicate compliance efforts. One such comprehensive privacy law in the United States is the CCPA, which came into effect on January 1, 2020. Among other things, the CCPA requires companies that process personal information of California residents to make new detailed disclosures to consumers about such companies' data collection, use and sharing practices, gives California residents expanded rights to access and delete their personal information and to opt out of certain personal information sharing with (and sales of personal information to) third parties. The CCPA provides for civil penalties for violations, as well as a private right of action for certain data breaches that result in the loss of personal data. This private right of action is expected to increase the likelihood of, and risks associated with, data breach litigation. The CCPA was amended in September 2018, November 2019 and September 2020, and it is possible that further amendments will be enacted, but even in its current form it remains unclear how various provisions of the CCPA will be interpreted and enforced. Additionally, a new privacy law, the California Privacy Rights Act ("CPRA"), was approved by California voters in the election of November 3, 2020. The CPRA, which will take effect in most material respects on January 1, 2023, modifies the CCPA significantly, including by expanding consumers' rights with respect to certain sensitive personal information and creating a new state agency to oversee implementation and enforcement efforts, potentially resulting in further uncertainty and requiring us to incur additional costs and expenses in an effort to comply. Other state laws are changing rapidly and there have been ongoing discussions and proposals in the U.S. Congress with respect to new federal data privacy and security laws to which we would become subject if enacted. All of these evolving compliance and operational requirements impose significant costs that are likely to increase over time, may require us to modify our data processing practices and policies, divert resources from other initiatives and projects, and could restrict the way products and services involving data are offered, all of which may have a material and adverse impact on our business, financial condition and results of operations.

In addition to government regulation, privacy advocates and industry groups have and may in the future propose self-regulatory standards from time to time. These and other industry standards may legally or contractually apply to us, or we may elect to comply with such standards. We expect that there will continue to be new proposed laws and regulations concerning data privacy and security, and we cannot yet determine the impact such future laws, regulations and standards may have on our business. New laws, amendments to or re-interpretations of existing laws, regulations, standards and other obligations may require us to incur additional costs and restrict our business operations. For example, there is an increasing trend of jurisdictions requiring data localization, which may prohibit companies from storing data relating to resident individuals in data centers outside the relevant jurisdiction or, at a minimum, require a complete set of the data to be stored in data centers within the relevant jurisdiction. Because the interpretation and application of laws, regulations, standards and other obligations relating to data privacy and security are still uncertain, it is possible that these laws, regulations, standards and other obligations may be interpreted and applied in a manner that is inconsistent with our data processing practices and policies or the features of our products and services. If so, in addition to the possibility of fines, lawsuits, complaints, inquiries, allegations, regulatory investigations, public censure, other claims and penalties, and significant costs for remediation and damage to our reputation, we could be materially and adversely affected if legislation or regulations are expanded to require changes in our data processing practices and policies or if governing jurisdictions interpret or implement their legislation or regulations in ways that negatively impact our business, financial condition and results of operations. Furthermore, the developing requirements relating to clear and prominent privacy notices (including in the context of obtaining informed and specific consents to the collection and processing of personal information, where applicable) may potentially deter end users from consenting to certain uses of their personal information.

In general, negative publicity of us or our industry regarding actual or perceived violations of our end users' privacy-related rights, including fines and enforcement actions against us or other similarly placed businesses, also may impair users' trust in our privacy practices and make them reluctant to give their consent to share their data with us. Any inability to adequately address data privacy or security-related concerns, complaints, inquiries or allegations when they arise, even if unfounded, or to comply with applicable laws, regulations, standards and other obligations relating to data privacy and security, could result in additional cost and liability to us, harm our reputation and brand, damage our relationships with consumers and have a material and adverse impact on our business, financial condition and results of operations. In addition, due to data privacy or data security concerns, our ability to retain or increase our user base and user engagement may be materially and adversely affected, we may not be able to maintain or grow our revenues as anticipated and our financial results could be materially and adversely affected.

With regard to our commercial arrangements, we and our counterparties, including business partners and external service providers, might be subject to contractual obligations regarding the processing of personal information. While we believe our and our counterparties' conduct under these agreements is in material compliance with all applicable laws, regulations, standards, certifications and orders relating to data privacy or security, we or our counterparties may fail, or be alleged to have failed, to be in full compliance. In the event that our acts or omissions result in alleged or actual failure to comply with applicable laws, regulations, standards, certifications and orders relating to data privacy or security, we may incur liability. While we endeavor to include indemnification provisions or other protections in such agreements to mitigate liability and losses stemming from our counterparties' acts or omissions, we may not always be able to negotiate for such protections and, even where we can, there is no guarantee that our counterparties will honor such provisions or that such protections will cover the full scope of our liabilities and losses.

While we strive to comply with our internal data privacy guidelines as well as all applicable data privacy and security laws and regulations and contractual obligations in respect of personal information, there is no assurance that we are able to comply with these laws, regulations and contractual obligations in all respects. Any failure or perceived failure by us, external service providers or business partners to comply may result in proceedings or actions against us, including fines and penalties or enforcement orders (including orders to cease processing activities) being levied on us by government agencies or proceedings or actions against us by our business partners, customers or end users, including class action privacy litigation in certain jurisdictions, and could damage our reputation and discourage current and future users from using our products and services, which could materially and adversely affect our business, financial condition and results of operations. In addition, compliance with applicable laws on data privacy requires substantial expenditure and resources, including to continually evaluate our policies and processes and adapt to new requirements that are or become applicable to us on a jurisdiction-by-jurisdiction basis, which would impose significant burdens and costs on our operations or may require us to alter our business practices. Concerns about the security of personal information also could lead to a decline in general Internet usage, which could result in a decrease in demand for our products and services and have a material and adverse effect on our business, financial condition and results of operations. Furthermore, if the local government authorities in our target markets require real-name registration for users of our platform, the growth of our customer and end user bases may slow down and our business, financial condition and results of operations may be adversely affected.

The expansion of our international operations exposes us to significant regulatory, economic and political risks.

Expansion of our operations and customer base worldwide is essential to our growth strategy. We operate internationally with local offices in the U.S., India, Germany, China, and Japan, among other locations.

We expect that our international activities will continue to grow over the foreseeable future as we continue to pursue opportunities in existing and new markets, which will require significant management attention and financial resources worldwide. In connection with such expansion, we may face difficulties including costs associated with varying seasonality patterns, potential adverse movement of currency exchange rates, longer payment cycle difficulties in collecting accounts receivable in some countries, tariffs and trade barriers, a variety of regulatory or contractual limitations on our ability to operate, adverse tax events, reduced protection of intellectual property rights in some countries, political risks and a geographically and culturally diverse workforce and customer base. Failure to overcome any of these difficulties could harm our business.

In addition, we will face risks in doing business internationally that could adversely affect our business, including:

- the difficulty of managing and staffing international operations and the increased operations, travel, infrastructure and legal compliance costs associated with numerous international locations;
- challenges to our corporate culture resulting from a dispersed workforce;
- our ability to effectively price our products in competitive international markets;
- foreign ownership restrictions;
- potentially greater difficulty collecting accounts receivable and longer payment cycles;
- the need to adapt and localize our products and services for specific countries;
- the effect of differing governmental responses to the COVID-19 pandemic and the continuing impact of the pandemic on individuals, businesses and economies in various foreign jurisdictions;
- difficulties in understanding and complying with local laws, regulations and customs in foreign jurisdictions;
- difficulties in complying with local laws, regulations and customs in foreign jurisdictions, including those governing competition, pricing, internet activities, cybersecurity and data protection, employment and labor laws, privacy, collection, use, processing, or sharing of personal information, intellectual property, and other activities important to our business;
- difficulties with differing technical and environmental standards, privacy, cybersecurity, data protection and telecommunications regulations and certification requirements across multiple jurisdictions, which could prevent customers from deploying our products and services or limit their usage;
- difficulties in understanding, and adapt our products and services to, local end users' habits and preferences;
- the complexities of complying with current and future export controls and economic sanctions administered by the Department of Commerce Bureau of Industry and Security and the Treasury Department's Office of Foreign Assets Control and other relevant sanctions authorities;
- tariffs and other non-tariff trade barriers, such as quotas and local content rules;
- more limited protection for intellectual property rights in some countries;
- adverse tax consequences;
- fluctuations in currency exchange rates, which could increase the price of our products and services in certain markets, increase the expenses of our international operations and expose us to foreign currency exchange rate risk or the cost and risk of hedging transaction if we choose to enter into such transactions in the future;
- currency control regulations, which might restrict or prohibit our conversion of other currencies into RMB and/or U.S. dollars; and
- restrictions on the transfer of funds across borders.

Our failure to manage any of these risks successfully could harm our international operations, and adversely affect our business, operating results and financial condition. In some cases, compliance with the laws and regulations of one country could violate the laws and regulations of another country. As our global operations evolve, we cannot assure you that we are able to fully comply with the legal requirements of each jurisdiction and successfully adapt our business models to local market conditions. Due to the complexity involved in our international business expansion, we cannot assure you that we are or will be in compliance with all local laws.

The COVID-19 pandemic has disrupted our and our business partners' operations and it, or any future health epidemic or other adverse public health developments, may continue to do so.

On January 30, 2020, the International Health Regulations Emergency Committee of the World Health Organization declared the novel coronavirus disease 2019, or COVID-19, outbreak a public health emergency of international concern, and on March 11, 2020 the World Health Organization declared the global COVID-19 outbreak a pandemic. The COVID-19 virus continues to spread rapidly worldwide, including where our customers, suppliers and end users are located and where we have business operations. During the COVID-19 pandemic, government authorities around the world have ordered businesses to close and people to remain at home while imposing significant restrictions on traveling and social gatherings. Our customers and suppliers are also affected by COVID-19 related restrictions and closures. These measures have impacted, and may further impact, our workforce and operations, the operations of our customers and suppliers and other business partners. There continues to be significant uncertainties associated with the COVID-19 pandemic, including with respect to the ultimate spread of the virus, the severity of the disease, the duration of the outbreak, the possibility of successive waves of outbreaks, further actions that may be taken by government authorities around the world to contain the virus or to treat its impact, and the scope and length of the resulting economic downturn. The economic downturn due to COVID-19 may adversely affect our customers' ability to pay and customer demand for and end user usage of our products and services, which would adversely affect our operating results and financial condition.

Failure to contain the further spread of COVID-19 will prolong and exacerbate the general economic downturn. In addition, while the potential impact and duration of the COVID-19 pandemic on the global economy and our business in particular may be difficult to assess or predict, the pandemic has resulted in, and may continue to result in, significant disruption of global financial markets, which may reduce our ability to access capital or our customers' ability to pay us for past or future purchases, which could negatively affect our liquidity. The COVID-19 pandemic could also reduce the demand for our products and services. For example, in the first quarter of 2020, we experienced a decline in demand for IoT PaaS due to reduced production capacity of OEMs as COVID-19 containment measures began to be widely introduced across China where substantially all of them were located. The pandemic has also caused unprecedented logistical challenges to the global supply chains, resulting in disrupted shipping lanes, labor and material shortages and fluctuating consumer demand for smart devices, all of which have negatively impacted our business and results of operations. Additionally, the travel restrictions and social distancing guidelines imposed by governments globally have reduced the amount of international travels and in-person meetings, which in turn limited our ability to engage in in-person marketing with brands, particularly those brands based in the U.S. and Europe. There is no guarantee that the prolonged pandemic will not affect the demands for our products and services in the future. From time to time, some instances of COVID-19 infections have emerged and may emerge in various regions of the PRC, and varying levels of temporary travel restrictions and other measures have been and may be reinstated to contain the infections, which may adversely affect our business in the areas affected. In addition, a recession or financial market correction resulting from the spread of COVID-19 could decrease overall technology spending, adversely affecting demand for our products and services, our business and the value of the ADSs.

The global pandemic of COVID-19 continues to rapidly evolve, and we will continue to monitor the COVID-19 situation closely. The ultimate impact of the COVID-19 pandemic or a similar health epidemic is highly uncertain and subject to change. The extent of the impact of the COVID-19 pandemic on our operational and financial performance, including our ability to execute our business strategies and initiatives, will depend on future developments, including, but not limited to, the duration and spread of the pandemic, its severity and variants, the actions to contain the disease or treat its impact, related restrictions on travel, and the duration, timing and severity of the impact on customer spending, including any recession resulting from the pandemic, all of which are uncertain and cannot be predicted.

If we fail to manage the operation of our platform and infrastructure, our customers and end users may experience service outages and delays in the deployment of our products and services.

We have experienced significant growth in the number of customers and end users and the amounts of data that our cloud platform supports. We seek to maintain sufficient excess capacity on our cloud platform to meet the needs of all of our customers and end users. We also seek to maintain excess capacity to facilitate the rapid provision of new customer deployments and the expansion of existing customer deployments. In addition, we need to properly manage our technological operations infrastructure and cloud platform, and to respond to security threats, cyber-attacks and performance and reliability problems that may arise from time to time, in order to support version control, changes in hardware and software parameters and the evolution of our products and services. However, the provision of new hosting infrastructure requires adequate lead-time. We have experienced, and may in the future experience, system disruptions, outages and other performance problems. These types of problems may be caused by a variety of factors, including infrastructure changes, human or software errors, viruses, security attacks, fraud, spikes in customer and end user usage and denial of service issues. In some instances, we may not be able to identify the cause or causes of these performance problems within an acceptable period of time.

Further, if our contractual and other business relationships with our cloud infrastructure providers are terminated, suspended, or suffer a material change to which we are unable to adapt, such as the elimination of services or features on which we depend, we could be unable to provide our platform and could experience significant delays and incur additional expense in transitioning customers to a different cloud infrastructure provider. Any difficulties these providers face, including the potential of certain network traffic receiving priority over other traffic (i.e., lack of net neutrality), may adversely affect our business, and we exercise little control over these providers, which increases our vulnerability to problems with the services they provide. Any disruptions, outages, defects, and other performance and quality problems with our platform or with our products and services and internet infrastructure on which they rely, or any material change in our contractual and other business relationships with our cloud infrastructure providers, could result in reduced use of our platform, increased expenses, including service credit obligations, and harm to our brand and reputation, any of which could have a material adverse effect on our business, financial condition, and results of operations.

Defects, errors or any other problems associated with our products and services could diminish demand for our products or services, harm our business and results of operations and subject us to liability.

Our customers may use our products and services for important aspects of their businesses, and any errors, defects or disruptions to our products and services and any other performance problems with our products and services could damage our customers' businesses and, in turn, hurt our brand and reputation. We provide regular updates to our products and services, which have in the past contained, and may in the future contain, undetected errors, failures, vulnerabilities and bugs when first introduced or released. Real or perceived errors, failures, bugs or security vulnerabilities in our products could result in negative publicity, loss of or delay in market acceptance of our platform, loss of competitive position, lower customer retention or claims by customers for losses sustained by them. In such an event, we may be required, or may choose, for customer relations or other reasons, to expend additional resources in order to help correct the problem. As a result, our reputation and our brand could be harmed, and our business, operating results and financial condition may be adversely affected. Moreover, the edge capabilities of IoT PaaS are embedded in modules manufactured by certain third-party suppliers; we also use third-party suppliers to manufacture the finished smart devices for our smart device distribution customers. Such modules and finished smart devices may contain defects, errors or other product issues, which may negatively impact the performance of our platform, our products and services, and Tuya-powered smart devices, damage our reputation, harm our ability to attract new and existing customers, and incur significant support, repair or replacement costs even if we can be reimbursed from the third-party suppliers.

We generate a significant portion of our revenues from a limited number of major customers and any loss of business from these customers could have a negative impact on our revenues and harm our business.

We derive a significant portion of our revenues from a limited number of major customers. Our five largest customers in the aggregate accounted for approximately 17.0%, 20.7% and 17.2% of our total revenues, respectively, for the years ended December 31, 2019, 2020 and 2021. Our ability to maintain close relationships with major customers is essential to the success of our business.

However, the purchase orders placed by specific customers may vary from period to period, and we typically do not have long-term purchase commitments from customers not enrolled in our membership program. As a result, most of our customers could reduce or cease their use of our products and services at any time without any penalty or termination charges. A major customer in one year may not provide the same level of revenues for us in any subsequent year. In addition, reliance on any individual customer for a significant portion of our revenues may give that customer a degree of pricing leverage when negotiating contracts and terms of service with us.

Many factors not within our control could cause the loss of, or reduction in, business or revenues from any customer, and these factors are not predictable. These factors include, among others, pricing pressure from competitors, a change in a customer's business strategy, rising raw material prices, or failure of a module supplier to develop competitive products. Our customers may choose to pursue alternative technologies and develop alternative products in addition to, or in lieu of, our products, either on their own or in collaboration with others, including our competitors. The loss of any major customer, or a significant decrease in the volume of customer demand or the price at which we sell our products to customers, could materially adversely affect our financial condition and results of operations.

We have a history of net loss and net cash operating outflow and may not be able to achieve or sustain profitability in the future.

We have experienced net loss in each year since inception. We generated net losses of US$70.5 million, US$66.9 million and US$175.4 million in 2019, 2020 and 2021, respectively. As of December 31, 2021, we had an accumulated deficit of US$367.9 million. We expect to continue to devote significant resources to research and development activities. We also expect to continue to incur substantial sales and marketing expenses in acquiring and retaining customers and enhancing our brand awareness, and incur substantial general and administrative expenses including those associated with operating as a public company. We may not be able to increase our revenue enough to offset the increase in operating expenses resulting from these investments. If we are unable to achieve and sustain profitability, or if we are unable to achieve the revenue growth that we expect from these investments, the value of our business and stock may decrease.

Additionally, we recorded net cash operating outflow of US$56.6 million, US$49.2 million and US$126.1 million in 2019, 2020 and 2021, respectively. If we continue to experience net cash operating outflow in the future, our business, liquidity, financial condition and results of operations may be materially and adversely affected. There is no assurance that we will always generate sufficient net income or operating cash flows to meet our working capital requirements and repay our liabilities as they become due, due to a variety of factors. For actions we intend to take to finance our future working capital requirements and capital expenditures, see "Item 5. Operating and Financial Review and Prospects—5.B. Liquidity and Capital Resources." There can be no assurance that we will be able to successfully take any of these actions in a timely manner, including prudently managing our working capital, or raising additional equity or debt financing on terms that are acceptable to us. Our failure to take these actions as and when necessary could materially adversely affect our liquidity, results of operations, financial condition and ability to operate.

We cannot guarantee that our future monetization strategies will be successfully implemented or generate sustainable revenues and profit.

We have developed a diversified revenue model and plan to explore additional opportunities to monetize our customer base and technology by, for example, promoting additional value-added services to end users to generate more subscription fees. If these efforts fail to achieve our anticipated results, we may not be able to increase or maintain our revenue growth. Specifically, in order to increase the number of our customers and end users and their levels of spending, we will need to address a number of challenges, including providing consistent quality products and services; continuing to innovate and stay ahead of our competitors; and improving the effectiveness and efficiency of our sales and marketing efforts. If we fail to address any of these challenges, we may not be successful in increasing the number of our customers and end users and their expenditures with us, which could have a material adverse impact on our business, financial condition and results of operations.

Our results may fluctuate from period to period, and if we fail to meet securities analysts' and investors' expectations, the trading price of our ADSs and the value of your investment could decline substantially.

Our operating results have fluctuated from period to period and may continue to fluctuate in the future as a result of a variety of factors, many of which are outside of our control and are unpredictable. For example, our business model is based in large part on our ability to accurately estimate customer demands, which may constrain our ability to forecast revenues. If operating results for any particular period fall below securities analysts' and investors' expectations, then the trading price of our ADSs could decline substantially. Some factors that may cause our operating results to fluctuate from period to period include:

- our ability to attract, retain and increase revenues from customers and end users;
- market acceptance of our products and services and our ability to introduce new products and services and enhance existing products and services;
- competition and the actions of our competitors, including pricing changes and the introduction of new products and services, services and geographies;
- our ability to control costs and operating expenses, including the fees that we pay cloud infrastructure providers and module suppliers;
- changes in our pricing as a result of our negotiations with our larger customers or our optimization efforts or otherwise;
- the rate of expansion and productivity of our sales force;
- change in the mix of products and services that our customers and end users use;

- changes in end user and customer demand as end users increase and decrease their demands for smart home products due to the imposition or easing of stay-at-home, travel and other government mandates or changes in end user or customer demand for our products and services in response to the COVID-19 pandemic;
- the expansion of our business, particularly in international markets;
- changes in foreign currency exchange rates;
- changes in laws, regulations or regulatory enforcement, in China, the United States or other countries, that impact our ability to market, sell or deliver our products;
- significant security breaches of, technical difficulties with, or interruptions to, the delivery and use of our products and services on our platform;
- allegations, even if not supported by fact or based on isolated incidents, relating to cybersecurity events relating to our business operations or our unauthorized use, misuse or disclosure of personal information or other sensitive information;
- general economic and political conditions that may adversely affect a prospective customer's ability or willingness to adopt our products and services, delay a prospective customer's adoption decision, reduce the revenues that we generate from the use of our products and services or impact customer retention;
- extraordinary expenses such as litigation or other dispute-related settlement payments;
- sales tax and other tax determinations by authorities in the jurisdictions in which we conduct business;
- the impact of new accounting pronouncements;
- expenses incurred in connection with mergers, acquisitions or other strategic transactions and integrating acquired business, technologies, services, products and other assets; and
- fluctuations in share-based compensation expense.

The occurrence of one or more of the foregoing and other factors may cause our operating results to vary significantly. As such, we believe that period-to-period comparisons of our operating results may not be meaningful and should not be relied upon as an indication of future performance. If we fail to meet or exceed the expectations of investors or securities analysts, then the trading price of our ADSs could fall substantially, and we could face costly lawsuits, including securities class action suits.

Any failure to effectively develop and expand our marketing and sales capabilities could harm our ability to increase our customer base and achieve broader market acceptance of our products and services.

Historically, we have relied on the adoption of our products and services by developers through our self-service portal as well as more targeted sales efforts. Our ability to further increase our customer base and achieve broader market acceptance of our platform will significantly depend on our ability to expand our marketing and sales operations. We plan to maintain a sufficient number of sales people both domestically and internationally. We also plan to dedicate significant resources to sales and marketing programs. All of these efforts will require us to invest significant financial and other resources and if they fail to attract additional customers and end users our business will be harmed.

We believe that there is significant competition for sales personnel, including sales representatives, sales managers, and sales engineers, with the skills and technical knowledge that we require. Our ability to achieve significant revenue growth will depend, in large part, on our success in recruiting, training, and retaining sufficient numbers of sales personnel to support our growth. New hires require significant training and may take significant time before they achieve full productivity. Our new hires may not become productive as quickly as we expect, if at all, and we may be unable to hire or retain sufficient numbers of qualified individuals in the markets where we do business or plan to do business. In addition, particularly if we continue to grow rapidly, new members of our sales force will have relatively little experience working with us, our products and platform, and our business model. If we are unable to hire and train sufficient numbers of effective sales personnel, our sales personnel do not reach significant levels of productivity in a timely manner, or our sales personnel are not successful in acquiring new customers and end users or expanding usage by existing customers and end users, our business will be harmed.

We believe that continued growth in our business is also dependent upon identifying, developing and maintaining strategic relationships with additional retail channels that can drive substantial revenues. If we fail to identify additional channel partners in a timely and cost-effective manner, or at all, or are unable to assist our current and future channel partners in independently selling and deploying our products and services, then our business, operating results, and financial condition could be adversely affected.

Any failure to offer high-quality developer and customer support may adversely affect our relationships with our developers and customers.

High quality, ongoing developer and customer support are critical to the successful marketing, sale and adoption of our products and services. Many of our customers depend on our customer support team to assist them in deploying our products and services effectively, help them resolve post-deployment issues quickly and provide ongoing support. As we grow our developer and customer base, we will need to further invest in and expand our developer and customer support teams, which could strain our resources and reduce profit margins. If we do not devote sufficient resources or otherwise do not help our developers and customers adopt our products and services, quickly resolve any post-implementation matters, and provide effective ongoing developer and customer support and training, our ability to expand sales to existing and future developers and customers and our reputation would be adversely affected. Our support teams will face additional challenges associated with our international operations, including those associated with delivering support and documentation in multiple languages. We might also face additional difficulties associated with providing customer support and warranties to our smart device distribution customers as we may not be able to control customer service terms of third party suppliers. Increased demand for developer and customer support, without corresponding revenues, could increase costs and adversely affect our business, operating results and financial condition. Any failure to maintain high-quality developer and customer support, or a market perception that we do not maintain high-quality developer and customer support, could adversely affect our reputation, business, operating results and financial condition.

We may be sanctioned or otherwise restricted from engaging in certain businesses due to heightened regulatory and public scrutiny, including in connection with our data processing practices and policies.

The level of regulatory and political scrutiny on technology companies in general, and companies whose businesses involve the processing of personal information in particular, has increased significantly recently and may continue to increase globally. Legislators have enacted, and may continue to enact, new laws or regulatory agencies may promulgate new rules or regulations that are adverse to our business, or they may view matters or interpret or enforce laws and regulations differently than they have in the past or in a manner adverse to our business. Such legislative or regulatory scrutiny or action may create or enhance different or conflicting obligations on us from one jurisdiction to another. Additionally, we have been in the past and may in the future be the subject of scrutiny and press attention. Any related claims, allegations and investigations, even if without merit, may be very expensive to defend or respond to, involve negative publicity, and substantial diversion of management time and effort. These events could also result in reputational harm, significant judgments, fines and remedial actions against us, or require us to change our business practices, make product or operational changes, or delay or preclude planned transactions, product launches or improvements, any of which could harm our business, reputation, financial condition, and operating results. For risks associated with our compliance with data privacy and data security laws in general, see "Item 3. Key Information—3.D. Risk Factors—Compliance with the rapidly evolving landscape of global data privacy and data security laws may be challenging, and any failure or perceived failure to comply with such laws, or other concerns about our practices or policies with respect to the processing of personal information, could damage our reputation and deter current and potential customers and end users from using our platform and products and services or subject us to significant compliance costs or penalties, which could materially and adversely affect our business, financial condition and results of operations."

Our business depends on our strong reputation and the value of "Tuya" brand. If we are unable to maintain and enhance our Tuya brand and increase market awareness of Tuya and its products and services, our business, operating results and financial condition may be adversely affected.

We must maintain and enhance the "Tuya" brand identity and increase market awareness of Tuya-powered smart devices generally and our products and services. The successful promotion of our brand will depend on our efforts to achieve widespread acceptance of our platform and products and services, attract and retain customers and our ability to maintain our current market leadership and successfully differentiate our products and services from competitors. These efforts require substantial expenditures, and we anticipate that they will increase as our market becomes more competitive and as we expand into new markets. These investments in brand promotion and thought leadership may not yield increased revenues. To the extent they do, the resulting revenues still may not be enough to offset the increased expenses we incur. In addition, independent industry analysts often provide reviews of our products and competing products and services, which may significantly influence the perception of our products and services. If these reviews are negative or not as strong as reviews of our competitors' products and services, our brand may be harmed. Adverse publicity (whether or not justified) relating to events or activities attributed to us, members of our workforce, agents, or third parties we rely on, may tarnish our reputation and reduce the value of our brand. Our brand value also depends on our ability to provide secure and trustworthy products and services as well as our ability to protect and use end users' data in a manner that meets their expectations. In addition, any security incident, including one that results in unauthorized disclosure of sensitive data, could cause material reputational harm. Damage to our reputation and loss of brand equity may reduce demand for our products and services and thus have an adverse effect on our future financial results, as well as require additional resources to rebuild our reputation and restore the value of the brands and could also reduce the trading price of our ADSs.

We could incur substantial costs in protecting or defending our intellectual property rights, and any failure to protect our intellectual property could adversely affect our business, operating results and financial condition.

Our success depends, in part, on our ability to protect our brand, trade secrets, trademarks, patents, domain names, copyrights and proprietary methods and technologies, whether registered or not, that we develop under patent and other intellectual property laws of China, the United States and other jurisdictions, so that we can prevent others from using our inventions and proprietary information. We currently rely on patents, trademarks, copyrights and trade secret law to protect our intellectual property rights. However, we cannot assure you that any of our intellectual property rights will not be challenged, invalidated or circumvented, or that our intellectual property will be sufficient to provide us with competitive advantages. In addition, we may be subject to allegation of infringement of other parties' proprietary rights, and other parties may misappropriate our intellectual property rights, which would cause us to suffer economic or reputational damages. Because of the rapid pace of technological change, we cannot assure you that all of our proprietary technologies and similar intellectual property rights can be patented in a timely or cost-effective manner, or at all.

We maintain and facilitate certain technical measures and access control mechanisms internally to ensure secure access to our proprietary information by our employees and consultants. We also maintain internal policies requiring our employees and consultants to enter into confidentiality agreements to control access to our proprietary information. However, if our employees and consultants do not fully comply with these internal policies, such policies may not effectively prevent disclosure of our confidential information, and it may be possible for unauthorized parties to copy our software or other proprietary technology or information, or to develop similar software independently without our having an adequate remedy for unauthorized use or disclosure of our confidential information.

In addition, the laws of some countries do not protect intellectual property and other proprietary rights to the same extent as the laws of the United States. Statutory laws and regulations are subject to judicial interpretation and enforcement and may not be applied consistently due to the lack of clear guidance on statutory interpretation. Confidentiality, invention assignment and non-compete agreements may be breached by counterparties, and there may not be adequate remedies available to us for any such breach. Accordingly, we may not be able to effectively protect our intellectual property rights or to enforce our contractual rights. To the extent we expand our international activities, our exposure to unauthorized copying, transfer and use of our proprietary technology or information may increase.

Preventing any unauthorized use of our intellectual property is difficult and costly and the steps we take may be inadequate to prevent the misappropriation of our intellectual property. Litigation may be necessary in the future to enforce our intellectual property rights, determine the validity and scope of our proprietary rights or those of others, or defend against claims of infringement or invalidity. Such litigation could be costly, time-consuming and distracting to management, result in a diversion of significant resources, the narrowing or invalidation of portions of our intellectual property and have an adverse effect on our business, operating results and financial condition. Our efforts to enforce our intellectual property rights may be met with defenses, counterclaims and countersuits attacking the validity and enforceability of our intellectual property rights or alleging that we infringe the counterclaimant's own intellectual property. Any of our patents, trade secrets, copyrights, trademarks or other intellectual property rights could be challenged by others or invalidated through administrative process or litigation. We can provide no assurance that we will prevail in such litigation. In addition, our proprietary methods and technologies that are regarded as trade secrets may be leaked or otherwise become available to, or be independently discovered by, our competitors and in these cases we would not be able to assert any trade secret rights against those parties. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position. To the extent that our employees or consultants use intellectual property owned by others in their work for us, disputes may arise as to the rights in related know-how and inventions.

There can be no assurance that our particular ways and means of protecting our intellectual property and proprietary rights, including business decisions about when to file patent applications and trademark applications, will be adequate to protect our business or that our competitors will not independently develop similar technology. We could be required to spend significant resources to monitor and protect our intellectual property rights. If we fail to protect and enforce our intellectual property and proprietary rights adequately, our competitors might gain access to our technology and our business, operating results and financial condition could be adversely affected.

Unauthorized or improper disclosures of personal information, cyber-attacks or other security incidents or data breaches that affect our networks or systems, or those of our cloud service providers or our customers, whether inadvertent or purposeful, could degrade our ability to conduct our business, compromise the integrity of our products and services, platform and data, result in significant data losses and the theft of our intellectual property, damage our reputation, expose us to liability to third parties and require us to incur significant additional costs to maintain the security of our networks and data which could adversely affect our business, financial condition and results of operations.

We depend significantly on our technology infrastructure, IT systems, data and other equipment and systems to conduct virtually all of our business operations, ranging from our internal operations and research and development activities to our marketing and sales efforts and communications with our customers, end users, suppliers and business partners. In addition, our products and services collect and store data of customers and end users, some of which may involve sensitive information, including personal information, trade secrets and other proprietary information. Internal or external individuals or entities may attempt to penetrate our network security, or that of our platform, and to disrupt or cause harm to our business operations, including by sabotaging or misappropriating our personal or proprietary information or that of our customers, end users, employees, suppliers and business partners or to cause interruptions of our products and services and platform. Because the vulnerabilities and techniques used by such individuals or entities to access, disrupt or sabotage devices, systems and networks change frequently and may not be recognized until launched against a target, we may be unable to anticipate these techniques, and we may not become aware in a timely manner of such a security breach, which could exacerbate any damage we experience.

While we take reasonable measures to protect the security of, and against unauthorized access to, our systems, as well as the security of personal information and proprietary information, it is possible that our security controls and other security practices we follow may not prevent the improper access to or disclosure of personal information or proprietary information. We also rely on systems provided by third parties, including our clients, which may also suffer security breaches or unauthorized access to or disclosure of personal information or proprietary information. Additionally, we depend on our employees and contractors to appropriately handle confidential and sensitive data, including customer data, and to deploy our IT resources in a safe and secure manner that does not expose our network systems to security breaches or the loss of data. Any data security incidents, including internal malfeasance by our employees, unauthorized access or usage, virus or similar breach or disruption of us or our service providers could result in loss of confidential or proprietary information or personal information, damage to our reputation, loss of customers and end users, litigation, regulatory investigations, fines, penalties and other liabilities. Accordingly, if our cybersecurity measures or those of our customers fail to protect against unauthorized access, attacks (which may include sophisticated cyberattacks), the compromise or mishandling of data, or other misconduct or malfeasance, including by computer hackers, employees, contractors, vendors, customers and business partners, as well as software bugs, human error or technical malfunctions, then our reputation, business, operating results and financial condition could be adversely affected. Cyberattacks and other security incidents aimed at our products could lead to third-party claims that our product failures have caused damages to our customers or end users.

We experience cyber-attacks of varying degrees and other attempts to gain unauthorized access to our systems from time to time, which may include by way of malware, phishing attacks, ransomware attacks, denial of service attacks, brute-force attacks or other means, any of which may result in disclosure of confidential information and intellectual property, defective products, production downtimes or compromised data, including personal information. Such cybersecurity threats and attacks that we may be subject to may take a variety of forms ranging from individuals or groups of hackers to sophisticated organizations, including state-sponsored actors and may even culminate in "mega breaches" targeted against cloud services and other hosted software. As the techniques used to obtain unauthorized access or sabotage systems change frequently and generally are not identified until they are launched against a target, we may be unable to anticipate these attacks or to implement adequate preventative measures. We anticipate that increase in the frequency and sophistication of cyber and other security threats, particularly with respect to breaches of IoT devices, and our customers' increasing demands for cyber and other security protections and standards in our products, may cause us to incur additional costs to comply with such demands.

Any unauthorized access, acquisition, use or destruction of information we collect, store, transmit or otherwise process, the unavailability of such information or other disruptions of our ability to provide solutions to our clients or end users, regardless of whether it originates or occurs on our systems or those of third party service providers or clients, could expose us to significant liability under our contracts, regulatory actions, litigation, investigations, remediation obligations, damage to our reputation and brand, theft of intellectual property, supplemental disclosure obligations, loss of customer, consumer and partner confidence in the security of our applications, destruction of information, indemnity obligations, impairment to our business, and resulting fees, costs, expenses, loss of revenues and other potential liabilities and harms to our business. In addition, if a high profile security breach occurs within our industry, our customers and potential customers may lose trust in the security of our systems and information even if we are not directly affected.

Many statutory requirements, both in China, the U.S., the EU, as well as in other jurisdictions in which we operate, include obligations for companies to notify data protection authorities and individuals of security breaches involving certain personal information, which could result from breaches experienced by us or our external service providers. These laws are not consistent, and compliance in the event of a widespread data breach is difficult and may be costly. In addition, such mandatory disclosures could lead to negative publicity and may cause our current and prospective customers or end users to lose confidence in the effectiveness of our data security measures.

Our failure to maintain necessary permits and licenses to operate our business operations under applicable laws and regulations could materially and adversely affect our business and results of operations.

In accordance with the laws and regulations in the jurisdictions in which we operate, we are required to maintain various approvals, licenses, permits and certifications in order to operate our business. Complying with such laws and regulations may require substantial expense, and any non-compliance may expose us to liability. We cannot guarantee that we will be able to obtain all requisite approvals, licenses, permits and certifications. Regulatory authorities who have extensive authority to supervise and regulate the industry we operate in may not interpret relevant laws and regulations the way we do. In addition, as the regulatory regime for the IoT and related industries in China and other jurisdictions in which we operate continues to evolve, new laws, regulations and regulatory requirements are promulgated and implemented from time to time, and the interpretation and application of existing laws, regulations and regulatory requirements are subject to changes. We may be required to obtain approvals, licenses, permits and certifications that we do not currently have for our existing business or new scope of business that we may expand into in the future. In the event of non-compliance, we may have to incur significant expenses and divert substantial management time to rectify the incidents. In the future, if we fail to obtain all the necessary approvals, licenses, permits and certifications required by relevant laws and regulations or if we are deemed to have conducted business operations requesting certain approvals, licenses, permits and certifications without having one, we may be subject to fines or the suspension of operations of the relevant business segments or facilities that do not have all the requisite approvals, licenses, permits and certifications, which could materially and adversely affect our business and results of operations. We may also experience adverse publicity arising from non-compliance with government regulations, which would negatively impact our reputation.

Furthermore, in the event that we are required to renew our existing licenses or permits or acquire new ones, whether as a result of the promulgation of new laws and regulations or otherwise, we cannot assure you that we will be able to meet the requisite conditions and requirements, or that the relevant government authorities will always, if ever, exercise their discretion in our favor. There may also be delays on the part of government authorities in reviewing our applications and granting approvals, whether due to the lack of human resources or the imposition of new rules, regulations, government policies or their implementation, interpretation and enforcement. If we are unable to obtain, or experience material delays in obtaining, necessary government approvals, our operations may be substantially disrupted, which could materially and adversely affect our business, financial condition and results of operations.

We may be involved in legal proceedings, litigations and disputes relating to alleged infringement of intellectual property rights, which could adversely affect our business, operating results and financial condition.

There is considerable patent and other intellectual property development activity in our industry. Our future success depends, in part, on not infringing the intellectual property rights of others. Our competitors or other third parties may in the future claim that our products and services or platform and underlying technology infringe on their intellectual property rights, and we may be found to be infringing on such rights. We may be unaware of the intellectual property rights of others that may cover some or all of our technology. Any claims or litigation could cause us to incur significant expenses and, if successfully asserted against us, could require that we pay substantial damages or ongoing royalty payments, prevent us from offering our products and services, require us to develop alternative non-infringing technology or require that we comply with other unfavorable terms, any of which could have a material adverse effect on our business and results of operations. We may also be obligated to indemnify our customers or business partners in connection with any such litigation and to obtain licenses or modify our products and services or platform, which could further exhaust our resources. Even if we were to prevail in the event of claims or litigation against us, any claim or litigation regarding intellectual property could be costly and time-consuming and divert the attention of our management and other employees from our business. Patent infringement, trademark infringement, trade secret misappropriation and other intellectual property claims and proceedings brought against us, whether successful or not, could harm our brand, business, operating results and financial condition.

If we are unable to hire, retain and motivate qualified personnel, our business will suffer.

Our future success depends, in part, on our ability to continue to attract and retain highly skilled personnel. We believe that there is, and will continue to be, intense competition for highly skilled management, technical, sales and other personnel with experience in the industries in which we operate. We must provide competitive compensation packages and a high-quality work environment to hire, retain and motivate employees. If we are unable to retain and motivate our existing employees and attract qualified personnel to fill important positions, we may be unable to manage our business effectively, including the development, marketing and sale of our products and services, which could adversely affect our business, operating results and financial condition. To the extent we hire personnel from competitors, we also may be subject to allegations that they have been improperly solicited or divulged proprietary or other confidential information.

We may acquire or invest in business, technologies, services, products and other assets, which may divert our management's attention and result in the incurrence of debt or dilution to our shareholders. We may be unable to integrate acquired businesses and technologies successfully or achieve the expected benefits of such acquisitions.

We may evaluate and consider potential strategic transactions, including acquisitions of, or investments in, businesses, technologies, services, products and other assets in the future. We also may enter into relationships with other businesses to expand our products and services, which could involve preferred or exclusive licenses, additional channels of distribution, discount pricing or investments in other companies.

Any acquisition, investment or business relationship may result in unforeseen operating difficulties and expenditures. In particular, we may encounter difficulties assimilating or integrating the businesses, technologies, products, personnel or operations of the acquired companies, particularly if the key personnel of the acquired company choose not to work for us, their products or services are not easily adapted to work with our platform, or we have difficulty retaining the customers of any acquired business due to changes in ownership, management or otherwise. Acquisitions also may disrupt our business, divert our resources or require significant management attention that would otherwise be available for development of our existing business. Moreover, the anticipated benefits of any acquisition, investment or business relationship may not be realized or we may be exposed to unknown risks or liabilities.

Negotiating these transactions can be time consuming, difficult and expensive, and our ability to complete these transactions may often be subject to approvals that are beyond our control. Consequently, these transactions, even if announced, may not be completed. In connection with these types of transactions, we may issue additional equity securities that would dilute our existing shareholders; use cash that we may need in the future to operate our business; incur large charges or substantial liabilities; incur debt on terms unfavorable to us or that we are unable to repay; encounter difficulties retaining key employees of the acquired company or integrating diverse offerings or business cultures; or become subject to adverse tax consequences, substantial depreciation, or deferred compensation charges. The occurrence of any of these foregoing could adversely affect our business, operating results and financial condition.

Negative publicity about us, our products and services, operations and our directors, management and business partners may adversely affect our reputation and business.

We may, from time to time, receive negative publicity, including negative internet and blog postings, ratings or comments on social media platforms or through traditional media about our company, our business, our directors and management, our brands, our products and services, our suppliers or other business partners. Negative publicity about us, such as alleged misconduct by our employees, unauthorized use, misuse or release of personal information or other sensitive information, unethical business practices, or rumors relating to our business, management, employees, or our shareholders and affiliates, or negative publicity about other companies that use similar brand names as ours, can harm our reputation, business and results of operations. Any such allegations, even if not supported by facts or based on isolated incidents, may lead to inquiries, regulatory investigations or legal actions against us. Such actions could substantially damage our reputation and cause us to incur significant costs to defend ourselves. Certain of such negative publicity may be the result of malicious harassment or unfair competition by third parties. We may even be subject to government or regulatory investigation as a result of such third-party conduct and may be required to spend significant time and incur substantial costs to defend ourselves against such third-party conduct, and we may not be able to conclusively refute each of the allegations within a reasonable period of time, or at all.

We may receive complaints from our customers and end users on our products and services, pricing and customer support. If we do not handle customer complaints effectively, our brand and reputation may suffer, our customers and end users may lose confidence in us and they may reduce or cease their use of our products and services. Our success depends, in part, on our ability to generate positive customer feedback and minimize negative feedback on social media channels where existing and potential customers and end users seek and share information. If actions we take or changes we make to our products and services or platform upset these customers and end users, their online commentary could negatively affect our brand and reputation. Complaints or negative publicity about us, our products and services or platform could materially and adversely impact our ability to attract and retain customers and end users, our business, results of operations and financial condition.

Seasonality may cause fluctuations in our sales and operating results.

We have in the past experienced, and expect in the future to continue to experience, seasonal fluctuations in our revenues and sales from time to time as a result of the holiday season and customers' buying patterns. We have experienced lower growth in revenues in the first quarter as a result the reduced capacity of OEM customers located in China due to the Lunar New Year. As an illustration of such seasonality, we had approximately 3,000 customers who generated revenues ("revenue-generating customers") in the first quarter of 2021, decreasing from approximately 3,400 revenue-generating customers in the fourth quarter of 2020. Our revenue-generating customers then increased to approximately 3,700 in the second quarter of 2021. The rapid growth in our business has offset this seasonal trend to some extent, however, we expect the historical seasonality trends to continue to impact our results of operations and financial condition. As a result, our results of operations and the trading price of our ADSs may fluctuate from time to time due to seasonality.

We face certain risks relating to the real properties that we lease.

We lease office spaces from third parties for our operations in China, the United States, India, Germany, and Japan. Any limitations on the leased properties, or lessors' title to such properties, may impact our use of the offices, or in extreme cases, result in relocation, which may in turn adversely affect our business operations. In addition, certain lease agreements of our leased properties in China have not been registered with the relevant PRC government authorities as required by PRC law. Therefore, we may be exposed to potential fines if we fail to rectify within the prescribed time period after receiving notices from the relevant PRC government authorities. Furthermore, certain lessors of our leased properties have not provided us with valid property ownership certificates or any other documentation proving their right to lease those properties to us. As of December 31, 2021, with respect to six leased properties in China with a gross floor area of approximately 4,505.5 square meters, we have not registered the respective lease agreements with the relevant PRC government authorities. With respect to five leased properties in China with a gross floor area of approximately 1,919.8 square meters, the lessors have not provided us with valid property ownership certificates. The foregoing properties represent only a small portion of the total gross floor area of our leased properties. As of the date of this annual report, we are not aware of any material actions or claims raised by any third parties challenging our use of these properties we currently lease, nor have we received any notices from the PRC government authorities. If our lessors are not the owners of the properties or they have not obtained consents from the owners or their lessors or permits from the relevant government authorities, our leases could be invalidated. If leases are invalid, we may face the risk of moving out of the leased property.

Changes in laws and regulations related to the internet or changes in the internet infrastructure itself may diminish the demand for our products and services, and could adversely affect our business, operating results and financial condition.

The future success of our business depends on the continued use of the internet as well as continued demand for smart devices and our products and services. The PRC and foreign governments have in the past adopted, and may in the future adopt, laws or regulations affecting the use of the internet as a commercial medium.

Almost all access to the internet in China is maintained through state-owned telecommunication operators under the administrative control and regulatory supervision of the MIIT. In addition, the national networks in China are connected to the internet through state-owned international gateways, which are the only channels through which a domestic user can connect to the internet outside of China. We may face similar or other limitations in other countries in which we operate. We may not have access to alternative networks in the event of disruptions, failures or other problems with the internet infrastructure in China or elsewhere. In addition, the internet infrastructure in the countries in which we operate may not support the demands associated with continued growth in internet usage.

Changes in these laws or regulations could require us to modify our products and services in order to comply with these changes. In addition, government agencies or private organizations have imposed and may impose additional taxes, fees or other charges for accessing the internet or commerce conducted via the internet. These laws or charges could limit the growth of internet-related commerce or communications generally, or result in reductions in the demand for internet-based products and services such as our products and platform. In addition, the use of the internet as a business tool could be adversely affected due to delays in the development or adoption of new standards and protocols to handle increased demands of internet activity, security, reliability, cost, ease-of-use, accessibility and quality of service. The performance of the internet and its acceptance as a business tool has been adversely affected by "viruses," "worms," and similar malicious programs. If the use of the internet is reduced as a result of these or other issues, then demand for our products and services could decline, which could adversely affect our business, operating results and financial condition.

We may have insufficient computing resources, transmission bandwidth and storage space, which could result in disruptions and our business, results of operations and financial condition could be adversely affected.

Our operations are dependent in part upon transmission bandwidth provided by third-party telecommunications network providers, access to data centers to house our servers and other computing resources. There can be no assurance that we are adequately prepared for unexpected increases in bandwidth and data center demands by our customers and end users. The bandwidth and data centers we use may become unavailable for a variety of reasons, including service outages, payment disputes, network providers going out of business, natural disasters, networks imposing traffic limits, or governments adopting regulations that impact network operations. These bandwidth providers may become unwilling to sell us adequate transmission bandwidth at fair market prices, if at all. This risk is heightened where market power is concentrated with one or a few major networks. We also may be unable to move quickly enough to augment capacity to reflect growing traffic or security demands. Failure to put in place the capacity we require could result in a reduction in, or disruption of, service to our customers and ultimately a loss of those customers. Such a failure could result in our inability to acquire new customers demanding capacity not available on our platform. See also "Item 3. Key Information—D. Risk Factors—We rely upon third-party providers of cloud-based infrastructure to host our platform. Any disruption in the operations of these third-party providers, limitations on capacity or interference with our use could adversely affect our business, financial condition and results of operations."

Our products and services rely on the stable performance of servers, networks, IT infrastructure and data processing systems, and any disruption to such servers, networks, assets or systems due to internal or external factors could diminish demand for our products and services, harm our business, our reputation and results of operations and subject us to liability.

We rely in part upon the stable performance of our servers, networks, IT infrastructure and data processing systems for provision of our products and services. Disruptions to such servers, networks, assets or systems may occur due to internal or external factors, such as inappropriate maintenance, defects in the servers, cyber-attacks or other malicious attacks or hacks targeted at us, occurrence of catastrophic events or human errors. Such disruptions could result in negative publicity, loss of or delay in market acceptance of our products and services, loss of competitive position, lower customer retention or claims by customers for losses sustained by them, or loss, destruction or unauthorized use of, or access to, data (including personal information for which we may incur liability under applicable data protection laws). In such an event, we may need to expend additional resources to bring the incident to an end, mitigate the liability associated with the fallout of such incident, make notifications to regulators and individuals affected, replace damaged systems or assets, defend ourselves in legal proceedings and compensate customers or end users. In addition, we may not carry insurance to compensate us for any losses that may result from claims arising from disruption in servers. As a result, our reputation and our brand could be harmed, and our business, results of operations and financial condition may be adversely affected.

We may, from time to time, rely on intellectual properties that we license from third parties, including product designs that are integrated with our internally developed products.

We may, from time to time, rely on intellectual properties that we license from third parties, including third-party product design, which is used with certain of our products. We cannot be certain that our licensors are not infringing the intellectual property rights of third parties or that our licensors have sufficient rights to the licensed intellectual property in all jurisdictions in which we may sell our products. Some of our agreements with our licensors may be terminated for convenience by them. If we are unable to continue to license any of these intellectual properties on commercially reasonable terms, we will face delays in releases of certain products or we will be required to re-design our products until equivalent, non-infringing design can be licensed or developed and integrated into our current products. This effort could take significant time (during which we would be unable to continue to offer our affected products) and expense and may ultimately not be successful. In addition, our inability to obtain certain licenses or other rights might require us to engage in litigation regarding these matters, which could have a material adverse effect on our business, results of operations, prospects, and financial condition.

We may be subject to legal proceedings in the ordinary course of our business. If the outcomes of these proceedings are adverse to us, they could have a material adverse effect on our business, results of operations, and financial condition.

As of the date of this annual report, we are not party to any material legal or administrative proceedings. However, we or our directors, management, employees and shareholders have been, and may from time to time in the future be, subject to or involved in various claims, controversies, lawsuits, other legal and administrative proceedings and fines. Lawsuits and other administrative or legal proceedings can involve substantial costs, including the costs associated with investigation, litigation and possible settlement, judgment, penalty or fine. In addition, lawsuits and other legal and administrative proceedings may be costly and time consuming and may require a commitment of management and personnel resources that will be diverted from our normal business operations. There may also be negative publicity associated with litigation that could decrease customer acceptance of our product offerings, regardless of whether the allegations are valid or whether we are ultimately found liable. We may be involved in class action lawsuits in the United States in the future. Such lawsuits could divert a significant amount of our management's attention and other resources from our business and operations, which could harm our results of operations and require us to incur significant expenses to defend the lawsuits. For example, following the publication of our earnings release for the second quarter of 2021 in August 2021, a number of U.S. law firms have published similar investor alerts (the "Investor Alerts") regarding their investigations into potential claims against us on behalf of investors concerning whether we have "violated U.S. federal securities laws." The Investor Alerts referred to our falling share price after our earnings release published on August 18, 2021. As of the date of this annual report, we have not been served any complaints and are not aware of any proceeding brought against us based on the foregoing allegations. The fact that the Investor Alerts were made has no bearing on whether we have violated any U.S. securities laws. We believe that the allegations made in the Investor Alerts are without merit and, to our best knowledge, we have complied with our obligations under U.S. securities laws at all time. However, the mere threat of such claims and the costs associated with defending them could have a material adverse effect on business, results of operations and reputation. Any such class action suit, whether or not successful, could harm our reputation and restrict our ability to raise capital in the future. In addition, if a claim is successfully made against us, we may be required to pay significant damages, which could have a material adverse effect on our financial condition and results of operations.

Our directors or senior management members may be the subject of shareholder class action lawsuits that could affect our business, financial condition, results of operation, cash flows and reputation.

We anticipate that we or certain of our directors or officers may be a target for lawsuits in the future, including putative class action lawsuits brought by shareholders and lawsuits against our directors and officers as a result of their position in other public companies. We cannot assure you that our directors or officers and we will be able to prevail in their defense or reverse any unfavorable judgment on appeal, and our directors or officers and we may decide to settle lawsuits on unfavorable terms. Any adverse outcome of these cases, including any plaintiffs' appeal of the judgment in these cases, could result in payments of substantial monetary damages or fines, or changes to our business practices, and thus materially and adversely affect our business, financial condition, results of operation, cash flows, and reputation. In addition, we cannot assure you that our insurance carriers will cover all or part of the defense costs, or any liabilities that may arise from these matters. The litigation process may utilize a significant portion of our cash resources and divert management's attention from the day-to-day operations of our company, all of which could harm our business. We also may be subject to claims for indemnification related to these matters, and we cannot predict the impact that indemnification claims may have on our business or financial performance.

We face inventory obsolescence, shortage or excess risks. Our results of operations could be materially harmed if we are unable to accurately manage our inventories.

Our inventories consist mainly of (i) modules and chips relating to our IoT PaaS business; and (ii) finished smart devices purchased from manufacturers as part of our smart device distribution business. As of December 31, 2019, 2020 and 2021, we had inventories, net of US$23.0 million, US$42.3 million and US$62.6 million, respectively. In 2019, 2020 and 2021, we recorded inventory write-downs of US$0.3 million, US$0.5 million and US$1.8 million, respectively. Maintaining an optimal level of inventory is important for the success of our business. However, we are exposed to inventory obsolescence and inventory shortage risks as a result of a variety of factors beyond our control, including, changes of customer needs and the inherent uncertainty of the success of product launches. We regularly track our inventory to keep it at a level sufficient to fulfill customers' orders. We also proactively assess changes in market conditions and pre-store strategic raw materials in anticipation of potential supply shortage. However, we cannot assure you that we can accurately predict these trends and events and avoid under-stocking or overstocking inventory, or that our inventory management measures will be implemented effectively so that we will not have significant levels of inventory obsolescence, shortage or excess. As a result of unforeseen or sudden events, we may experience slow movement of our inventories, fail to utilize or sell our inventories swiftly, or face the risk of inventory obsolescence, and our business, results of operations, financial condition and prospects may be adversely affected.

We may require additional capital to support our business and response to business opportunities, and this capital might not be available on favorable terms, if at all.

We intend to continue to make investments to the long-term operating and development of our business and may require additional funds. In particular, we may seek additional funds to develop new products and enhance our platform and existing products, expand our operations, including our sales and marketing efforts and our presence outside of China, improve our infrastructure or acquire complementary businesses, technologies, services, products and other assets. Accordingly, we may need to engage in equity or debt financings to secure additional funds. If we raise additional funds through future issuances of equity or convertible debt securities, our shareholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences and privileges superior to holders of our ADSs. Any debt financing that we may secure in the future could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities. We may not be able to obtain additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth, scale our infrastructure, develop product enhancements and to respond to business challenges could be significantly impaired, and our business, operating results and financial condition may be adversely affected.

We are subject to the uncertainties associated with the tightening regulations on listing and securities offerings conducted overseas by China-based companies proposed and/or enacted in China and the U.S.

The PRC government authorities have been tightening their oversight and control over listings and offerings conducted overseas by Chinese companies and investment in overseas-listed China-based companies. For example, on December 28, 2021, the CAC and several other administrations jointly promulgated the Cybersecurity Review Measures which provide, among other things, that a "network platform operator" holding over one million users' personal information shall apply for a cybersecurity review when listing their securities "in a foreign country." In November 2021, the CAC promulgated the Draft Cyber Data Security Regulation which states that a cybersecurity review will be required for a listing in foreign countries contemplated by a data processor who processes the personal information of at least one million users or the listing of a data processor in Hong Kong which affects or may affect the national security. Further, in December 2021, the CSRC has published draft new regulations designed to establish the filing requirements that shall be followed by "PRC domestic companies" that directly or indirectly issue or list their securities overseas.

To the extent we are required to obtain any approvals, complete any filings and/or other administrative procedures or satisfy any other regulatory requirements under the above-mentioned proposed laws and regulations or any new regulatory requirements in the PRC in order to maintain the listing status of the ADSs or conduct listing or offering of our securities overseas, we cannot assure you that we will be able to meet these requirements in a timely manner, or at all. The PRC regulatory agencies may also take further actions requiring us, or making it advisable for us, not to proceed with such securities offering or maintain the listing status of the ADSs. If we proceed with any future listing or offering of our securities without obtaining the required approval, completing the necessary flings or other administrative procedures, or satisfying other regulatory requirements, we may face fines and other regulatory actions imposed by competent PRC regulatory agencies, and our ability to raise capital could be significantly limited or completely hindered, which could have a material adverse effect on our business, financial condition, and results of operations or cause the value of our securities to significantly decline or be worthless. See also "—Risks Related to Doing Business in China—The filing, approval or other administration requirements of the CSRC, the CAC or other PRC government authorities may be required to maintain our listing status or conduct future offshore securities offerings under PRC law" and "—Risks Related to Doing Business in China—The uncertainties in the PRC legal system could materially and adversely affect us."

In addition, as part of a continued regulatory focus in the U.S. on access to audit and other information currently protected by national law in some jurisdictions, such as those in China, the U.S. Holding Foreign Companies Accountable Act, or the HFCAA, has been signed into law on December 18, 2020. According to the HFCAA and the related implementation rules adopted by the SEC, if the SEC determines that we have filed audit reports issued by a registered public accounting firm that has not been subject to inspection by the PCAOB for three consecutive years beginning in 2021, our ADSs will be delisted from the NYSE and our securities will be prohibited from trading on a national securities exchange or in the over-the-counter trading market in the U.S. If this is to happen, our liquidity and ability to raise additional capital will be materially and adversely affected. See "—Risks Related to Doing Business in China—Our ADSs will be prohibited from trading in the United States under the Holding Foreign Companies Accountable Act, or the HFCAA, in 2024, if the PCAOB is unable to inspect or fully investigate auditors located in China, or 2023, if proposed changes to the law are enacted. The delisting of our ADSs, or the threat of their being delisted, may materially and adversely affect the value of your investment."

We face exposure to foreign currency exchange rate fluctuations, and such fluctuations could adversely affect our business, operating results and financial condition.

As we continue to expand our international operations, we will become increasingly exposed to the effects of fluctuations in currency exchange rates. The majority of our cash generated from revenues is denominated in Renminbi, and our expenses are generally denominated in the currencies of the jurisdictions in which we conduct our operations. Because we conduct business in currencies other than U.S. dollars but report our operating results in U.S. dollars, we also face translation exposure to fluctuations in currency exchange rates, which could hinder our ability to predict our future results and earnings and could impact our operating results. We recorded other comprehensive loss from foreign currency translation of US$0.4 million in 2019, and other comprehensive income from foreign currency translation of US$2.9 million and US$1.5 million in 2020 and 2021, respectively.

The value of the Renminbi against the U.S. dollar and other currencies has in the past fluctuated significantly, and may in the future continue to do so, affected by, among other things, changes in political and economic conditions and the foreign exchange policy adopted by the PRC government. With the development of the foreign exchange market and progress towards interest rate liberalization and Renminbi internationalization, the PRC government may in the future announce further changes to the exchange rate system, and we cannot assure you that the Renminbi will not appreciate or depreciate significantly in value against the U.S. dollar in the future. It is difficult to predict how market forces or PRC or U.S. government policy may impact the exchange rate between the Renminbi and the U.S. dollar in the future.

We are a holding company and we rely on dividends paid by our wholly foreign-owned enterprise in China for our cash needs. Any significant fluctuation of Renminbi against the U.S. dollar could adversely affect our business, operating results and financial condition, and the value of any dividends payable in U.S. dollars. To the extent that we need to convert U.S. dollars into Renminbi for our operations, appreciation of the Renminbi against the U.S. dollar would have an adverse effect on the Renminbi amount we would receive. Conversely, if we decide to convert our Renminbi into U.S. dollars for the purpose of making payments for dividends on our ordinary shares and the ADSs or for other business purposes, appreciation of the U.S. dollar against the Renminbi would have a negative effect on the U.S. dollar amount.

The fair value measurements of certain financial assets and liabilities require the use of estimates that are based on unobservable inputs, which inherently involves a certain degree of uncertainty.

Some of our financial assets and liabilities are measured at fair value, such as the short-term investments and long-term investments measured at fair value. In 2019, 2020 and 2021, our fair value change on short-term and long-term investments amounted to nil, nil and US$0.8 million, respectively. For financial reporting purposes, fair value measurements of these financial assets and liabilities are categorized into level 1, 2 or 3, based on, among other things, the observability and significance of the inputs used in the valuation technique. The fair value of financial assets and liabilities classified in levels 1 and 2 is determined based on observable inputs, while the determination of the fair value of level 3 financial assets and liabilities is based on valuation techniques and various assumptions of inputs that are unobservable which inherently involve a certain degree of uncertainty.

A range of factors, many of which are beyond our control, may influence and cause adverse changes to the estimates we use and thereby affect the fair value of these assets and liabilities. These factors include, but are not limited to, general economic conditions, changes in market interest rates and stability of the capital markets. Any of these factors, as well as others, could cause our estimates to vary from actual results and cause the fair value of our financial assets and liabilities to fluctuate substantially, which may in turn have a material adverse effect on our financial position and results of operations. The fair value of our short-term investments and long-term investments measured at fair value are subject to changes beyond our control, and any adverse movements in their fair value may directly affect our results of operations. If the fair value of our short-term investments and long-term investments measured at fair value were to fluctuate, our business, financial condition and results of operations could be materially adversely affected.

We are subject to credit risk related to defaults of customers, and any significant default on our accounts receivable could materially and adversely affect our liquidity, financial condition and results of operations.

We are exposed to credit risk related to defaults of our various customers. As of December 31, 2019, 2020 and 2021, our accounts receivable, net were US$5.4 million, US$12.3 million and US$32.7 million, respectively. Our accounts receivable turnover days were 13, 19 and 29 in 2019, 2020 and 2021, respectively. We may not be able to collect all such accounts receivable due to a variety of factors that are outside of our control. If the relationship between us and any of our customers is terminated or deteriorated, or if any of our customers experience financial difficulties to the extent it affects their ability to make timely payments, our corresponding accounts receivable might be adversely affected in terms of recoverability. Our accounts receivable balance may continue to grow alongside our business expansion, which may increase our risks for uncollectible receivable. If we are unable to timely collect our accounts receivable from our customers, our business, financial condition and results of operation may be materially and adversely affected.

If we fail to maintain proper and effective internal control over financial reporting, we may be unable to accurately or timely report our results of operations, meet our reporting obligations or prevent fraud, and investor confidence and the market price of our ADSs may be materially and adversely affected.

Section 404 of the Sarbanes-Oxley Act of 2002, or Section 404, requires that we maintain internal control over financial reporting and disclosure controls and procedures. An effective internal control environment is necessary to enable us to produce reliable financial reports and is an important component of our efforts to prevent and detect financial reporting errors and fraud. We are a public company subject to the Sarbanes-Oxley Act of 2002. Section 404 requires that we include a report from management on the effectiveness of our internal control over financial reporting in our annual report on Form 20-F beginning with our annual report for the fiscal year ending December 31, 2022. In addition, once we cease to be an "emerging growth company" as such term is defined in the JOBS Act, our independent registered public accounting firm must attest to and report on the effectiveness of our internal control over financial reporting. In addition, as we are now a public company, our reporting obligations may place a significant strain on our management, operational and financial resources and systems for the foreseeable future. We may be unable to timely complete our evaluation testing and any required remediation.

In the course of preparing and auditing our consolidated financial statements for the year ended December 31, 2019, we and our independent registered public accounting firm identified a material weakness in our internal control over financial reporting as of December 31, 2019. The material weakness in our internal control over financial reporting has not been remediated as of December 31, 2021. According to the U.S. Public Company Accounting Oversight Board, a "material weakness" is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our company's annual or interim consolidated financial statements will not be prevented or detected on a timely basis. The material weakness identified relates to our lack of sufficient and competent financial reporting and accounting personnel with appropriate knowledge and experience to address complex U.S. GAAP accounting issues and to prepare and review financial statements and related disclosures in accordance with U.S. GAAP and SEC reporting requirements. We are currently in the process of implementing a number of measures to address the material weakness. See "Item 15. Controls and Procedures—Internal Control over Financial Reporting." However, we cannot assure you that these measures may fully address the material weakness in our internal control over financial reporting.

During the course of documenting and testing our internal control procedures, in order to satisfy the requirements of Section 404, we may identify other deficiencies in our internal control over financial reporting that are deemed to be material weaknesses and render our internal control over financial reporting ineffective. In addition, if we fail to maintain the adequacy of our internal control over financial reporting, as these standards are modified, supplemented or amended from time to time, we may not be able to conclude on an ongoing basis that we have effective internal control over financial reporting in accordance with Section 404. If we fail to achieve and maintain an effective internal control environment, we could suffer material misstatements in our financial statements and fail to meet our reporting obligations, which would likely cause investors to lose confidence in our reported financial information. This could in turn limit our access to capital markets, harm our results of operations, and lead to a decline in the trading price of our ADSs. Additionally, ineffective internal control over financial reporting could expose us to increased risk of fraud or misuse of corporate assets and subject us to potential delisting from the stock exchange on which we list, regulatory investigations and civil or criminal sanctions. We may also be required to restate our financial statements for prior periods.

Our business is subject to the risks of earthquakes, fire, floods, pandemics and other natural catastrophic events, and to interruption by man-made problems such as power disruptions or terrorism.

A significant natural disaster, such as an earthquake, fire, flood or pandemic, occurring at our headquarters, at one of our local offices and facilities or where a business partner is located could adversely affect our business, operating results and financial condition. Further, if a natural disaster or man-made problem were to affect our service providers, this could adversely affect the ability of our customers and end users to use our products and services. In addition, natural disasters and acts of terrorism could cause disruptions in our or our customers' businesses, national economies or the world economy as a whole, as is the case currently due to the COVID-19 pandemic. We also rely on our network and third-party infrastructure and enterprise applications and internal technology systems for our engineering, sales and marketing, and operations activities. In the event of a major disruption caused by a natural disaster or man-made problem, we may be unable to continue our operations and may endure system interruptions, reputational harm, delays in our development activities, lengthy interruptions in service, breaches of data security and loss of critical data, any of which could adversely affect our business, operating results and financial condition.

In addition, computer malware, viruses and computer hacking, fraudulent use attempts and phishing attacks have become more prevalent in our industry, have occurred on our platform and have impacted some of our customers in the past and may occur on our platform in the future. Any failure to maintain performance, reliability, security, integrity and availability of our products and services and technical infrastructure, including third-party infrastructure and services upon which we rely, may expose us to significant consequences, including legal and financial exposure and loss of customers and end users, and give rise to litigation, consumer protection actions, or harm to our reputation, and as a result, may hinder our ability to retain existing customers and end users and attract new customers and end users.

We have limited business insurance coverage, which could expose us to significant costs and business disruption.

Insurance products available in the PRC and many other markets in which we operate currently are not as extensive as those offered in more developed regions. Consistent with customary industry practice in the markets in which we operate, our business insurance is limited, and we do not carry key-man life insurance. Any uninsured damage to our facilities or technology infrastructures or disruption of our business operations could require us to incur substantial costs and divert our resources, which could have an adverse effect on our business, financial condition and results of operations. For more information, see "Item 4. Information on the Company—4.B. Business Overview—Insurance."

We have granted, and may continue to grant, share-based awards, which may increase our share-based compensation and may have an adverse effect on our results of operations.

We have adopted a share option scheme in December 2014 (the "2015 Equity Incentive Plan" or "2015 Plan," as amended in July 2020 and February 2021). We account for compensation costs for all share-based awards using a fair-value based method and recognize expenses in our consolidated statements of comprehensive loss in accordance with U.S. GAAP. For details of the 2015 Plan, see "Item 6. Directors, Senior Management and Employees—6.B. Compensation—Share Incentive Plan." In 2019, 2020 and 2021, we recorded US$5.2 million, US$9.4 million and US$66.1 million, respectively, in share-based compensation expenses, respectively. As of December 31, 2021, there were US$195.1 million unrecognized share-based compensation expenses related to share options granted by us, which were expected to be recognized over a weighted-average vesting period of 1.56 years. As of December 31, 2021, there were US$24.9 million of unrecognized share-based compensation expenses related to RSUs granted by us, which were expected to be recognized over a weighted-average vesting period of 3.66 years. We believe the granting of share-based awards is of significant importance to our ability to attract and retain key personnel and employees, and we will continue to grant share-based awards in the future. As a result, our expenses associated with share-based compensation may increase, which may have an adverse effect on our results of operations.

Risks Related to Our Corporate Structure

If the PRC government finds that the agreements that establish the structure for operating some of our operations in China do not comply with PRC regulations relating to the relevant industries, or if these regulations or the interpretation of existing regulations change in the future, we could be subject to severe penalties or be forced to relinquish our interests in those operations.

Foreign ownership of telecommunication businesses is subject to restrictions under current PRC laws and regulations. For example, foreign investors are generally not allowed to own more than 50% of the equity interests in an information service provider or other value-added telecommunication service provider (other than operating e-commerce, domestic multi-party communication, storage and forwarding and call center) and the major foreign investor in a value-added telecommunication service provider in China must have experience in providing value-added telecommunications services overseas and maintain a good track record in accordance with the Encouraged Industries Catalog for Foreign Investment (2020 version), the Special Administrative Measures for Foreign Investment Access (Negative List (2021)) (the "Negative List (2021)"), and other applicable laws and regulations. We are a Cayman Islands company and currently conduct substantially all of our business operations in the PRC through our PRC subsidiaries, including Tuya Information, our wholly-owned subsidiary incorporated in the PRC. We are classified as a foreign enterprise under the PRC laws and regulations and our wholly foreign-owned enterprise in the PRC is a foreign-invested enterprise. Given the above-mentioned restrictions, we have determined that it was not viable for us to hold Hangzhou Tuya Technology, or the VIE, directly through equity ownership. Therefore, we may only conduct the business operations currently conducted by the VIE through a series of contractual arrangements between our PRC subsidiary on one hand, and the VIE and its shareholders on the other hand, to comply with PRC laws and regulations. These contractual arrangements have enabled us to (i) exercise effective control over the VIE, (ii) receive substantially all of the economic benefits of the VIE, (iii) have the pledge right over the equity interests in the VIE as the pledgee, and (iv) have an exclusive option to purchase all or part of the equity interests in the VIE when and to the extent permitted by PRC law. As a result of these contractual arrangements, we have control over and are the primary beneficiary of the VIE and hence consolidate their financial results under U.S. GAAP.

In the opinion of our PRC legal counsel, Jia Yuan Law Offices, (i) the ownership structures of our wholly foreign-owned enterprise and the VIE in China are not in violation of provisions of applicable PRC laws and regulations currently in effect; and (ii) the contractual arrangements between our wholly foreign-owned enterprise, the VIE and its shareholders governed by PRC law are not in violation of provisions of applicable PRC laws or regulations currently in effect, and valid and binding upon each party to such arrangements and enforceable against each party thereto in accordance with their terms and applicable PRC laws and regulations currently in effect. However, we have been further advised by our PRC legal counsel that there are substantial uncertainties regarding the interpretation and application of current and future PRC laws, regulations and rules. Thus, the PRC government authorities may take a view contrary to the opinion of our PRC legal counsel. It is uncertain whether any new PRC laws or regulations relating to variable interest entity structure will be adopted or if adopted, what they would provide. If we or the VIE is found to be in violation of any existing or future PRC laws or regulations, or fail to obtain or maintain any of the required permits or approvals to operate our business, the relevant PRC government authorities would have broad discretion to take action in dealing with such violations or failures, including:

- revoking the business licenses and/or operating licenses of such entities;
- imposing fines on us;
- confiscating any of our income that they deem to be obtained through illegal operations;
- discontinuing or placing restrictions or onerous conditions on the operations of the VIE;
- placing restrictions on our right to collect revenues;
- shutting down our servers or blocking our app or websites; or
- requiring us to restructure our ownership structure or operations.

Any of these events could cause significant disruption to our business operations and severely damage our reputation, which would in turn have a material adverse effect on our financial condition and results of operations. Furthermore, new PRC laws, rules and regulations may be introduced to impose additional requirements that may be applicable to our corporate structure and the VIE. For details, please see "—Risks Related to Our Corporate Structure—Substantial uncertainties exist with respect to the interpretation and implementation of the newly enacted Foreign Investment Law and how it may impact the viability of our current corporate structure, corporate governance and operations." If occurrences of any of these events result in our inability to direct the activities of the VIE in China that most significantly impact its economic performance and/or our failure to receive the economic benefits and residual returns from the VIE, and we are unable to restructure our ownership structure and operations in a satisfactory manner, we may not be able to consolidate the financial results of the VIE in our consolidated financial statements in accordance with U.S. GAAP.

We rely on contractual arrangements with the VIE and its respective shareholders to use, or otherwise benefit from, certain licenses and approvals we may need in the future, which may not be as effective as direct ownership in providing operational control and could adversely affect our business, operating results and financial condition.

We have relied and expect to continue to rely on contractual arrangements with the VIE and its respective shareholders to conduct a portion of our operations in China. These contractual arrangements, however, may not be as effective as direct ownership in providing us with control over the VIE. For example, the VIE and its shareholders could breach their contractual arrangements with us by, among other things, failing to conduct the operations of the VIE in an acceptable manner or taking other actions that are detrimental to our interests.

If we had direct ownership of the VIE, we would be able to exercise our rights as a shareholder to effect changes in the board of directors of the VIE, which in turn could implement changes, subject to any applicable fiduciary obligations, at the management and operational level. However, under the current contractual arrangements, we rely on the performance by the VIE and its shareholders of their obligations under the contracts to exercise control over the VIE. If any dispute relating to these contracts remains unresolved, we will have to enforce our rights under these contracts through the operations of PRC law and arbitration, litigation and other legal proceedings and therefore will be subject to uncertainties in the PRC legal system.

Any failure by the VIE or its shareholders to perform their obligations under our contractual arrangements with them would have an adverse effect on part of our business.

If the VIE or its shareholders fail to perform their respective obligations under the contractual arrangements, we may have to incur substantial costs and expend additional resources to enforce such arrangements. We may also have to rely on legal remedies under PRC law, including seeking specific performance or injunctive relief, and contractual remedies, which we cannot assure you will be sufficient or effective under PRC law. For example, if the registered shareholders were to refuse to transfer their equity interests in the VIE to us or our designee when we exercise the purchase option pursuant to these contractual arrangements, or if they were otherwise to act in bad faith toward us, then we may have to take legal actions to compel them to perform their contractual obligations.

All the agreements under our contractual arrangements are governed by PRC law and provide for the resolution of disputes through arbitration in China. Accordingly, these contracts would be interpreted in accordance with PRC law and any disputes would be resolved in accordance with PRC legal procedures. As a result, uncertainties in the PRC legal system could limit our ability to enforce these contractual arrangements. See "—Risks Related to Doing Business in China—The uncertainties in the PRC legal system could materially and adversely affect us." Meanwhile, there are very few precedents and little formal guidance as to how contractual arrangements in the context of a VIE should be interpreted or enforced under PRC law. There remain significant uncertainties regarding the ultimate outcome of such arbitration if legal action becomes necessary. In addition, under PRC law, rulings by arbitrators are final, parties cannot appeal the arbitration results in courts, and if the losing parties fail to carry out the arbitration awards within a prescribed time limit, the prevailing parties may only enforce the arbitration awards in PRC courts through arbitration award recognition proceedings, which would require additional expenses and delay. In the event we are unable to enforce these contractual arrangements, or if we suffer significant delay or other obstacles in the process of enforcing these contractual arrangements, we may not be able to exert effective control over the VIE, and our business financial condition and results of operations may be negatively affected.

The registered shareholders of the VIE may have potential conflicts of interest with us, which may adversely affect part of our business.

The registered shareholders of the VIE may have actual or potential conflicts of interest with us. These shareholders may breach, or cause the VIE to breach, or refuse to renew, the existing contractual arrangements we have with them and the VIE, which would have a material and adverse effect on our ability to effectively control the VIE and receive economic benefits from them. For example, the shareholders may be able to cause our agreements with the VIE to be performed in a manner adverse to us by, among other things, failing to remit payments due under the contractual arrangements to us on a timely basis. We cannot assure you that when conflicts of interest arise any or all of these shareholders will act in the best interests of our company or such conflicts will be resolved in our favor.

For individuals who are also our directors and officers, we rely on them to abide by the laws of the Cayman Islands, which provide that directors and officers owe a fiduciary duty to the company that requires them to act in good faith and in what they believe to be the best interests of the company and not to use their position for personal gains. The registered shareholders of the VIE have executed powers of attorney to appoint one of our wholly foreign-owned enterprise or a person designated by one of our wholly foreign-owned enterprise to vote on their behalf and exercise voting rights as shareholders of the VIE. If we cannot resolve any conflict of interest or dispute between us and the shareholders of the VIE, we would have to rely on legal proceedings, which could result in disruption of part of our business and subject us to substantial uncertainty as to the outcome of any such legal proceedings.

The registered shareholders of the VIE may be involved in personal disputes with third parties or other incidents that may have an adverse effect on their respective equity interests in the VIE and the validity or enforceability of our contractual arrangements with the VIE and its shareholders. For example, in the event that any of the shareholders of the VIE divorces his or her spouse, the spouse may claim that the equity interest of the VIE held by such shareholder is part of their community property and should be divided between such shareholder and the spouse. If such claim is supported by the court, the relevant equity interest may be obtained by the shareholder's spouse or another third party who is not subject to obligations under our contractual arrangements, which could result in a loss of the effective control over the VIE by us. Similarly, if any of the equity interests of the VIE is inherited by a third party with whom the current contractual arrangements are not binding, we could lose our control over the VIE or have to maintain such control by incurring unpredictable costs, which could cause significant disruption to part of our business and operations and harm our financial condition and results of operations.

Contractual arrangements we have entered into with the VIE may be subject to scrutiny by the PRC tax authorities. A finding that we owe additional taxes could negatively affect our financial condition and the value of your investment.

Under applicable PRC laws and regulations, arrangements and transactions among related parties may be subject to audit or challenge by the PRC tax authorities. We could face material and adverse tax consequences if the PRC tax authorities determine that the contractual arrangements in relation to the VIE were not entered into on an arm's-length basis in such a way as to result in an impermissible reduction in taxes under applicable PRC laws, rules and regulations, and adjust income of the VIE in the form of a transfer pricing adjustment. A transfer pricing adjustment could, among other things, result in a reduction of expense deductions recorded by the VIE for PRC tax purposes, which could in turn increase their tax liabilities without reducing our PRC subsidiaries' tax expenses. In addition, the PRC tax authorities may impose late payment fees and other administrative sanctions on the VIE for the adjusted but unpaid taxes according to the applicable regulations. Our financial position could be materially and adversely affected if the VIE's tax liabilities increase or if they are required to pay late payment fees and other penalties.

We may lose the ability to use and benefit from assets held by the VIE that could be material or supplementary to the operation of our business if the VIE goes bankrupt or becomes subject to dissolution or liquidation proceeding.

As part of our contractual arrangements with the VIE, such entity may in the future hold certain assets that are material or supplementary to the operation of our business. If the VIE goes bankrupt and all or part of its assets become subject to liens or rights of creditors, we may be unable to continue some or all of our business activities we currently conduct through the contractual arrangement, which could materially and adversely affect our business, financial condition and results of operations. Under the contractual arrangements, the VIE may not, in any manner, sell, transfer, mortgage or dispose of their assets or legal or beneficial interests in the business without our prior consent. If the VIE undergoes voluntary or involuntary liquidation proceeding, third-party creditors may claim rights to some or all of these assets, thereby hindering our ability to operate part of our business, which could adversely affect our business, financial condition and results of operations.

Substantial uncertainties exist with respect to the interpretation and implementation of the newly enacted Foreign Investment Law and how it may impact the viability of our current corporate structure, corporate governance and operations.

The value-added telecommunications services that we conduct through the VIE are subject to foreign investment restrictions set forth in the Special Administrative Measures for Foreign Investment Access (Negative List(2021)) (the "Negative List (2021)") issued by the MOFCOM and the NDRC, and effective on January 1, 2022.

On March 15, 2019, the National People's Congress promulgated the Foreign Investment Law, which became effective on January 1, 2020 and replaced the Sino-Foreign Equity Joint Venture Enterprise Law, the Sino-Foreign Cooperative Joint Venture Enterprise Law and the Wholly Foreign- Owned Enterprise Law to become the legal foundation for foreign investment in the PRC. Since it is relatively new, uncertainties still exist in relation to its interpretation and implementation. For instance, under the Foreign Investment Law "foreign investment" refers to the investment activities directly or indirectly conducted by foreign individuals, enterprises or other entities in China. Though it does not explicitly classify contractual arrangements as a form of foreign investment, there is no assurance that foreign investment via contractual arrangements would not be interpreted as a type of indirect foreign investment activities in the future. In addition, the definition of foreign investment contains a catch-all provision which includes investments made by foreign investors through means stipulated in laws, administrative regulations or provisions of the State Council. Therefore, it still leaves leeway for future laws, administrative regulations or provisions promulgated by the State Council to provide for contractual arrangements as a form of foreign investment. In any of these cases, it will be uncertain whether our contractual arrangements will be deemed to be in violation of the market access requirements for foreign investment under the PRC laws and regulations. If further actions shall be taken under future laws, administrative regulations or provisions of the State Council, we may face substantial uncertainties as to whether we can complete such actions. Failure to do so could materially and adversely affect our current corporate structure, corporate governance and operations.

Risks Related to Doing Business in China

A severe or prolonged downturn in the PRC or global economy could materially and adversely affect our business, results of operations and financial condition.

The global macroeconomic environment is facing challenges, including the economic slowdown in the Eurozone, potential impact of the United Kingdom's exit from the EU on January 31, 2020, and the extreme volatility on the global economies and financial markets in relation to the COVID-19 pandemic and governments' responses thereto. There is considerable uncertainty over the long-term effects of the expansionary monetary and fiscal policies adopted by the central banks and financial authorities of some of the world's leading economies, including the United States and China. There have been concerns over unrest and terrorist threats in the Middle East, Europe and Africa and over the conflicts involving Ukraine, Syria and North Korea. There have also been concerns on the relationship among China and other Asian countries, which may result in or intensify potential conflicts in relation to territorial disputes, and the trade disputes between the United States and China. The ongoing trade tensions between the United States and China may have tremendous negative impact on the economies of not merely the two countries concerned, but the global economy as a whole. It is unclear whether these challenges and uncertainties will be contained or resolved, and what effects they may have on the global political and economic conditions in the long term.

Economic conditions in China are sensitive to global economic conditions, changes in domestic economic and political policies, and the expected or perceived overall economic growth rate in China. While the economy in China has grown significantly over the past decades, growth has been uneven, both geographically and among various sectors of the economy, and the rate of growth has been slowing in recent years. There is a possibility that China's economic growth may materially decline in the near future. Any severe or prolonged slowdown in the global or PRC economy may materially and adversely affect our business, results of operations and financial condition.

Changes in China's economic, political or social conditions or government policies could have a material adverse effect on our business, financial condition and results of operations.

Substantially all of our assets and operations are located in China. Accordingly, our business, financial condition, results of operations and prospects may be influenced to a significant degree by political, economic and social conditions in China generally. The Chinese economy differs from the economies of most developed countries in many respects, including the level of government involvement, level of development, growth rate, control of foreign exchange and allocation of resources. Although the Chinese government has implemented measures emphasizing the utilization of market forces for economic reform, the reduction of state ownership of productive assets, and the establishment of improved corporate governance in business enterprises, a substantial portion of productive assets in China is still owned by the government. In addition, the Chinese government continues to play a significant role in regulating industry development by imposing industrial policies. The Chinese government also exercises significant control over China's economic growth through allocating resources, controlling payment of foreign currency-denominated obligations, setting monetary policy and providing preferential treatment to particular industries or companies.

Any adverse changes in economic conditions in China, in the policies of the Chinese government or in the laws and regulations in China could have a material adverse effect on the overall economic growth of China. Such developments could adversely affect our business and results of operations, lead to a reduction in demand for our services and adversely affect our competitive position. The Chinese government has implemented various measures to encourage economic growth and guide the allocation of resources. Some of these measures may benefit the overall Chinese economy, but may have a negative effect on us. For example, our financial condition and results of operations may be adversely affected by government control over capital investments or changes in tax regulations. In addition, in the past the Chinese government has implemented certain measures, including interest rate adjustment, to control the pace of economic growth. These measures may cause decreased economic activity in China, which may adversely affect our business and results of operations.

We are exposed to risks associated with international relations and geopolitical risks.

We are exposed to risks associated with international relations. Any unfavorable government policies, including those on investment restrictions or international trade, such as capital controls or tariffs or internal payment and settlement system, or geopolitical confrontation and conflicts, may affect the demand for our products, impact the competitive position of our products, prevent us from selling products in certain countries, or even our participation in international capital markets or the international payment and settlement system, any of which would materially and adversely affect our international operations, results of operations and financial condition. The cost of importing and/or exporting products to or from any major markets in which our customers operate increase as a result of the implementation of any major tariffs, legislation and/or regulations or regional conflicts or instability, or if existing trade agreements are renegotiated or, in particular, if any foreign government takes retaliatory trade actions due to trade tension between such government and China, such changes could have an adverse effect on our business, financial condition and results of operations. Moreover, any political or trade controversies between any major global economy and China, whether or not directly related to our business, could have a material adverse effect on our business operations, results of operations and growth prospects. In September 2021, three United States senators and other commentators expressed concern about our alleged failure to protect U.S. consumers' data, and some have urged the U.S. government to take actions against us, including adding us to the Non-SDN Chinese Military-Industrial Complex Company List, or the NS-CMIC List. We are not aware of any investigation, proceeding or other regulatory action by any U.S. government activity against us in this respect as of the date of this annual report, and we believe the allegations against us are unfounded and without merit. However, if we were to be added to the NS-CMIC List, U.S. persons would be prohibited from purchasing or otherwise dealing in our publicly traded securities. This could affect the liquidity of our securities and could result in the delisting of the ADSs from U.S. markets. These various types of actions or government policies may cause investors to be unwilling to hold or buy our ADSs and consequently cause the trading price of our ADSs to decline.

The uncertainties in the PRC legal system could materially and adversely affect us.

The PRC legal system is a civil law system based on written statutes. Unlike the common law system, prior court decisions under the civil law system may be cited for reference but have limited precedential value.

The past decades have seen the progressive legislation by the PRC government designed to enhance the protections afforded to various forms of foreign investments in China. However, China has not developed a fully integrated legal system, and recently enacted laws and regulations may not sufficiently cover all aspects of economic activities in China. In particular, the PRC legal system is based on written statutes and prior court decisions have limited value as precedents. Since these laws and regulations are relatively new and the PRC legal system continues to rapidly evolve, the interpretations of many laws, regulations and rules may not be uniform and enforcement of these laws, regulations and rules involves uncertainties. These uncertainties may affect our judgment on the relevance of legal requirements and our ability to enforce our contractual rights or tort claims. In addition, the regulatory uncertainties may be exploited through unmerited or frivolous legal actions or threats in attempts to extract payments or benefits from us. Furthermore, the PRC legal system is based in part on government policies and internal rules, some of which are not published on a timely basis or at all and may have a retroactive effect. As a result, we may not be aware of our violation of any of these policies and rules until sometime after the violation. In addition, any administrative and court proceedings in China may be protracted, resulting in substantial costs and diversion of resources and management attention.

The PRC government has significant oversight and discretion over the conduct of our business and may intervene with or influence our operations as the government deems appropriate to further regulatory, political and societal goals. The PRC government has recently published new policies that may adversely affect our industry and our business, and we cannot rule out the possibility that it will in the future further release regulations or policies regarding our industry that could further adversely affect our business, financial condition and results of operations. Furthermore, the PRC government has also recently indicated an intent to exert more oversight and control over securities offerings and other capital markets activities that are conducted overseas and foreign investment in China-based companies like us. See "—We are subject to the uncertainties associated with the tightening regulations on listing and securities offerings conducted overseas by China-based companies proposed and/or enacted in China and the U.S." In addition, implementation of industry-wide regulations directly targeting our operations could cause the value of our securities to significantly decline. Therefore, investors of our company and our business face potential uncertainty from actions taken by the PRC government affecting our business.

You may experience difficulties in effecting service of legal process, enforcing foreign judgments or bringing actions in China against us or our management based on foreign laws.

We conduct substantially all of our operations in China, and substantially all of our assets are located in China. In addition, some of our senior executive officers reside within China for a significant portion of the time and are PRC nationals. As a result, it may be difficult or impossible for our shareholders to effect service of process upon us or these persons inside China. In addition, China does not have treaties providing for the reciprocal recognition and enforcement of judgments of courts with the Cayman Islands and many other countries and regions. Therefore, recognition and enforcement in China of judgments of a court in any of these non-PRC jurisdictions in relation to any matter not subject to a binding arbitration provision may be difficult or impossible.

In particular, shareholder claims that are common in the United States, including securities law class actions and fraud claims, generally are difficult to pursue as a matter of law or practicality in China. For example, in China, there are significant legal and other obstacles to obtaining information needed for shareholder investigations or litigation outside China or otherwise with respect to foreign entities. In the absence of mutual and practical cooperation mechanism, there has not been efficient regulatory cooperation between the local authorities in China and the securities regulatory authorities in the United States to implement cross-border supervision and administration so far. Although the local authorities in China may establish a regulatory cooperation mechanism with the securities regulatory authorities of another country or region to implement cross-border supervision and administration, such regulatory cooperation with the securities regulatory authorities in the Unities States have not been efficient in the absence of mutual and practical cooperation mechanism. According to Article 177 of the PRC Securities Law which became effective in March 2020, no overseas securities regulator is allowed to directly conduct investigation or evidence collection activities within the territory of the PRC. Accordingly, without the consent of the competent PRC securities regulators and relevant authorities, no organization or individual may provide the documents and materials relating to securities business activities to overseas parties. See also "—Risks Related to Our ADSs—You may face difficulties in protecting your interests, and your ability to protect your rights through U.S. courts may be limited, because we are incorporated under Cayman Islands law" for risks associated with investing in us as a Cayman Islands company.

We may rely on dividends and other distributions on equity paid by our PRC subsidiaries to fund any cash and financing requirements we may have, and any limitation on the ability of our PRC subsidiaries to make payments to us could have a material and adverse effect on our ability to conduct our business.

We are a Cayman Islands holding company and we rely principally on dividends and other distributions on equity from our PRC subsidiaries for our cash requirements, including for services of any debt we may incur. Our PRC subsidiaries' ability to distribute dividends is based upon their distributable earnings. Current PRC regulations permit our PRC subsidiaries to pay dividends to their respective shareholders only out of their accumulated profits, if any, determined in accordance with PRC accounting standards and regulations. In addition, each of our PRC subsidiaries are required to set aside at least 10% of its after-tax profits each year, if any, to fund a statutory reserve until such reserve reaches 50% of each of their registered capitals. These reserves are not distributable as cash dividends. If our PRC subsidiaries incur debt on their own behalf in the future, the instruments governing the debt may restrict their ability to pay dividends or make other payments to us. Any limitation on the ability of our PRC subsidiaries to distribute dividends or other payments to their respective shareholders could materially and adversely limit our ability to grow, make investments or acquisitions that could be beneficial to our businesses, pay dividends or otherwise fund and conduct our business.

To address the persistent capital outflow and the RMB's depreciation against the U.S. dollar in the fourth quarter of 2016, the People's Bank of China and the State Administration of Foreign Exchange, or SAFE, have implemented a series of capital control measures in the subsequent months, including stricter vetting procedures for China-based companies to remit foreign currency for overseas acquisitions, dividend payments and shareholder loan repayments. For instance, the Circular on Further Promoting the Reform of Foreign Exchange Management and Improving the Verification of Authenticity and Compliance Review (the "SAFE Circular 3"), issued on January 18, 2017, provides that the banks shall, when dealing with dividend remittance transactions from domestic enterprise to its offshore shareholders of more than US$50,000, review the relevant board resolutions, original tax filing form and audited financial statements of such domestic enterprise based on the principal of genuine transaction. The PRC government may continue to strengthen its capital controls and our PRC subsidiaries' dividends and other distributions may be subject to tightened scrutiny in the future. Any limitation on the ability of our PRC subsidiaries to pay dividends or make other distributions to us could materially and adversely limit our ability to grow, make investments or acquisitions that could be beneficial to our business, pay dividends, or otherwise fund and conduct our business.

In addition, the Enterprise Income Tax Law and its implementation rules provide that a withholding tax at a rate of 10% will be applicable to dividends payable by Chinese companies to non-PRC-resident enterprises unless reduced under treaties or arrangements between the PRC central government and governments of other countries or regions where the non-PRC resident enterprises are tax residents. Pursuant to the tax agreement between Mainland China and the Hong Kong Special Administrative Region, the withholding tax rate in respect to the payment of dividends by a PRC enterprise to a Hong Kong enterprise may be reduced to 5% from a standard rate of 10% if the Hong Kong enterprise (i) directly holds at least 25% of the PRC enterprise, (ii) is a tax resident in Hong Kong and (iii) could be recognized as a beneficial owner of the dividend from PRC tax perspective. Under administrative guidance, a Hong Kong resident enterprise must meet the following conditions, among others, in order to apply the reduced withholding tax rate: (i) it must be a company; (ii) it must directly own the required percentage of equity interests and voting rights in the PRC resident enterprise; and (iii) it must have directly owned such required percentage in the PRC resident enterprise throughout the 12 months prior to receiving the dividends. Nonresident enterprises are not required to obtain pre-approval from the relevant tax authority in order to enjoy the reduced withholding tax. Instead, nonresident enterprises and their withholding agents may, by self- assessment and on confirmation that the prescribed criteria to enjoy the tax treaty benefits are met, directly apply the reduced withholding tax rate, and file necessary forms and supporting documents when performing tax filings, which will be subject to post-tax filing examinations by the relevant tax authorities. Accordingly, our Hong Kong subsidiary may be able to benefit from the 5% withholding tax rate for the dividends it receives from our PRC subsidiaries, if it satisfies the conditions prescribed under the State Administration of Taxation on the Issues Concerning the Application of the Dividend Clauses of Tax Agreements (the "Guoshuihan [2009] 81"), and other relevant tax rules and regulations. However, if the relevant tax authorities consider the transactions or arrangements we have are for the primary purpose of enjoying a favorable tax treatment, the relevant tax authorities may adjust the favorable withholding tax in the future. Accordingly, there is no assurance that the reduced 5% will apply to dividends received by our Hong Kong subsidiary from our PRC subsidiaries. This withholding tax will reduce the amount of dividends we may receive from our PRC subsidiaries.

The custodians or authorized users of our controlling non-tangible assets, including chops and seals, may fail to fulfill their responsibilities, or misappropriate or misuse these assets.

Under the PRC law, legal documents for corporate transactions, including agreements and contracts are executed using the chop or seal of the signing entity or with the signature of a legal representative whose designation is registered and filed with relevant PRC market regulation authorities.

In order to secure the use of our chops and seals, we have established internal control procedures and rules for using these chops and seals. In any event that the chops and seals are intended to be used, the responsible personnel will submit the application which will then be verified and approved by authorized employees in accordance with our internal control procedures and rules. In addition, in order to maintain the physical security of our chops, we generally have them stored in secured locations accessible only to authorized employees. However, such internal control procedures may not be sufficient to prevent all instances of abuse or negligence. There is a risk that our employees could abuse their authority, for example, by entering into a contract not approved by us or seeking to gain control of one of our subsidiaries or VIE. If any employee obtains, misuses or misappropriates our chops and seals or other controlling non-tangible assets for whatever reason, we could experience disruption to our normal business operations. We may have to take corporate or legal action, which could involve significant time and resources to resolve and divert management from our operations.

If the preferential tax treatments and government subsidies granted by PRC government become unavailable, our results of operation and financial condition may be adversely affected.

Our PRC subsidiaries are subject to the PRC corporate income tax at a standard rate of 25% on their taxable income, while in 2019, 2020 and 2021, preferential tax treatment was available to one PRC subsidiary. Tuya Information renewed its "High-tech Enterprise" certificate in 2021, which allows it to apply an income tax rate of 15% for the three years ended December 31, 2022, 2023 and 2024. We cannot assure you that the PRC policies on preferential tax treatments will not change or that the current preferential tax treatments we enjoy or will be entitled to enjoy will not be canceled. Moreover, we cannot assure you that our PRC subsidiaries will be able to renew the same preferential tax treatments upon expiration. If any such change, cancelation or discontinuation of preferential tax treatment occurs, the relevant PRC subsidiaries will be subject to the PRC enterprise income tax, or EIT, at a rate of 25% on taxable income. As a result, the increase in our tax charge could materially and adversely affect our results of operations.

PRC regulation of loans to and direct investment in PRC entities by offshore holding companies and governmental control of currency conversion may restrict or delay us from using the proceeds of our offshore securities offerings to make loans or additional capital contributions to our PRC subsidiaries and making loans to the VIE or its subsidiaries, which could adversely affect our liquidity and our ability to fund and expand our business.

We are an offshore holding company conducting our operations in China through our PRC subsidiaries and the VIE. We may make loans to our PRC subsidiaries and VIE subject to the approval from government authorities and limitation of amount, or we may make additional capital contributions to our PRC subsidiaries in China.

Any loans to our PRC subsidiaries in China, which are treated as foreign-invested enterprises under PRC law, are subject to PRC regulations and foreign exchange loan registrations. For example, loans by us to our PRC subsidiaries in China to finance their activities cannot exceed statutory limits and must be registered with the local counterpart of SAFE. In addition, a foreign invested enterprise shall use its capital pursuant to the principle of authenticity and self-use within its business scope. The capital of a foreign invested enterprise shall not be used for the following purposes: (i) directly or indirectly used for payment beyond the business scope of the enterprises or the payment prohibited by relevant laws and regulations; (ii) directly or indirectly used for investment in securities investments other than banks' principal-secured products unless otherwise provided by relevant laws and regulations; (iii) the granting of loans to non-affiliated enterprises, except where it is expressly permitted in the business license; and (iv) paying the expenses related to the purchase of real estate that is not for self-use (except for the foreign-invested real estate enterprises).

SAFE promulgated the Notice of the State Administration of Foreign Exchange on Reforming the Administration of Foreign Exchange Settlement of Capital of Foreign-invested Enterprises, or SAFE Circular 19, effective June 2015, in replacement of the Circular on the Relevant Operating Issues Concerning the Improvement of the Administration of the Payment and Settlement of Foreign Currency Capital of Foreign-Invested Enterprises, the Notice from the State Administration of Foreign Exchange on Relevant Issues Concerning Strengthening the Administration of Foreign Exchange Businesses, and the Circular on Further Clarification and Regulation of the Issues Concerning the Administration of Certain Capital Account Foreign Exchange Businesses. Although SAFE Circular 19 allows RMB capital converted from foreign currency-denominated registered capital of a foreign-invested enterprise to be used for equity investments within China, it also reiterates the principle that RMB converted from the foreign currency-denominated capital of a foreign-invested company may not be directly or indirectly used for purposes beyond its business scope. Thus, it is unclear whether SAFE will permit such capital to be used for equity investments in China in actual practice. SAFE promulgated the Notice of the State Administration of Foreign Exchange on Reforming and Standardizing the Foreign Exchange Settlement Management Policy of Capital Account, or SAFE Circular 16, effective on June 9, 2016, which reiterates some of the rules set forth in SAFE Circular 19, but changes the prohibition against using RMB capital converted from foreign currency-denominated registered capital of a foreign-invested company to issue RMB entrusted loans to a prohibition against using such capital to issue loans to non-associated enterprises. Violations of SAFE Circular 19 and SAFE Circular 16 could result in administrative penalties. SAFE Circular 19 and SAFE Circular 16 may significantly limit our ability to transfer any foreign currency we hold to our PRC subsidiaries, which may adversely affect our liquidity and our ability to fund and expand our business in China.

On October 23, 2019, SAFE issued Notice by the State Administration of Foreign Exchange of Further Facilitating Cross-border Trade and Investment, or Circular 28, which took effect on the same day. Circular 28, subject to certain conditions, allows foreign-invested enterprises whose business scope does not include investment, or non-investment foreign- invested enterprises, to use their capital funds to make equity investments in China. Since Circular 28 was issued only recently, its interpretation and implementation in practice are still subject to substantial uncertainties.

In light of the various requirements imposed by PRC regulations on loans to and direct investment in PRC entities by offshore holding companies, we cannot assure you that we will be able to complete the necessary government registrations or obtain the necessary government approvals on a timely basis, if at all, with respect to future loans to our PRC subsidiaries or VIE or future capital contributions by us to our wholly foreign- owned subsidiaries in China. As a result, uncertainties exist as to our ability to provide prompt financial support to our PRC subsidiaries or VIE when needed. If we fail to complete such registrations or obtain such approvals, our ability to use the proceeds we expect to receive from our future offshore securities offerings and to capitalize or otherwise fund our PRC operations may be negatively affected, which could materially and adversely affect our liquidity and our ability to fund and expand our business.

Governmental control of currency conversion may limit our ability to utilize our revenues effectively and affect the value of your investment.

The PRC government imposes controls on the convertibility of the Renminbi into foreign currencies and, in certain cases, the remittance of currency out of China. We receive substantially all of our revenues in Renminbi. Under our current corporate structure, our Cayman Islands holding company primarily relies on dividend payments from our PRC subsidiaries to fund any cash and financing requirements we may have. Under existing PRC foreign exchange regulations, payments of current account items, including profit distributions, interest payments and trade and service-related foreign exchange transactions, can be made in foreign currencies without prior approval of SAFE by complying with certain procedural requirements. Specifically, under the existing exchange restrictions, without prior approval of SAFE, cash generated from the operations of our PRC subsidiaries in China may be used to pay dividends to our company. However, approval from or registration with appropriate government authorities is required where Renminbi is to be converted into foreign currency and remitted out of China to pay capital expenses such as the repayment of loans denominated in foreign currencies. As a result, we need to obtain SAFE approval to use cash generated from the operations of our PRC subsidiaries and VIE to pay off their respective debt in a currency other than Renminbi owed to entities outside China, or to make other capital expenditure payments outside China in a currency other than Renminbi. The PRC government may at its discretion restrict access to foreign currencies for current account transactions in the future. If the foreign exchange control system prevents us from obtaining sufficient foreign currencies to satisfy our foreign currency demands, we may not be able to pay dividends in foreign currencies to our shareholders, including holders of our ADSs.

The filing, approval or other administration requirements of the CSRC, the CAC or other PRC government authorities may be required to maintain our listing status or conduct future offshore securities offerings.

On August 8, 2006, six PRC regulatory agencies, including the MOFCOM, the State-Owned Assets Supervision and Administration Commission, the SAT, the State Administration for Industry and Commerce, the CSRC, and the State Administration of Foreign Exchange, or the SAFE, jointly adopted the Regulations on Mergers and Acquisitions of Domestic Enterprises by Foreign Investors (the "M&A Rules"), which came into effect on September 8, 2006 and were amended on June 22, 2009. The M&A Rules include, among other things, provisions that purport to require that an offshore special purpose vehicle that is controlled by PRC domestic companies or individuals and that has been formed for the purpose of an overseas listing of securities through acquisitions of PRC domestic companies or assets to obtain the approval of the CSRC prior to the listing and trading of such special purpose vehicle's securities on an overseas stock exchange. On September 21, 2006, the CSRC published on its official website procedures regarding its approval of overseas listings by special purpose vehicles. However, substantial uncertainty remains regarding the scope and applicability of the M&A Rules to offshore special purpose vehicles.

While the application of the M&A Rules remains unclear, we believe, based on the advice of our PRC legal counsel, Jia Yuan Law Offices, that the CSRC approval abovementioned is not required in our context because (1) our wholly foreign-owned PRC subsidiary was not established through mergers or acquisitions of equity interest or assets of a PRC domestic company owned by PRC companies or individuals as defined under the M&A Rules that are the beneficial owners of our Company; and (2) no provision in the M&A Rules clearly classifies contractual arrangements as a type of transaction subject to the M&A Rules. There can be no assurance that the relevant PRC government agencies, including the CSRC, would reach the same conclusion as our PRC legal counsel. Furthermore, the PRC government authorities may strengthen oversight over offerings that are conducted overseas and/or foreign investment in overseas-listed China-based issuers like us. Such actions taken by the PRC government authorities may intervene our operations at any time, which are beyond our control. For instance, the relevant PRC governments promulgated the Opinions on Strictly Cracking Down on Illegal Securities Activities (the "Opinions"), among which, it is mentioned that the administration and supervision of overseas-listed China-based companies will be strengthened, and the special provisions of the State Council on overseas issuance and listing of shares by such companies will be revised, clarifying the responsibilities of domestic industry competent authorities and regulatory authorities. However, the Opinions were only issued recently, leaving uncertainties regarding the interpretation and implementation of these opinions. There is no assurance that any new rules or regulations promulgated in the future will impose additional requirements on us.

On December 24, 2021, the CSRC published the draft Regulations of the State Council on the Administration of Overseas Issuance and Listing of Securities by Domestic Companies (Draft for Comments) (the "Administrative Provisions") and the draft Measures for the Record-Filing of Overseas Issuance and Listing of Securities by Domestic Companies (Draft for Comments) (the "Filing Measures") for public comments. Pursuant to these drafts, "PRC domestic companies" that directly or indirectly issue or list their securities overseas shall file with CSRC certain required documents. More specifically, a "PRC domestic company" that seeks an initial public offering overseas, or a "PRC domestic company" already listed overseas who seeks to list its securities in another overseas market, shall file the required documents with the CSRC within three business days after submitting the application documents for the foregoing transactions. "PRC domestic companies" are defined to include both (i) PRC companies limited by shares, and (ii) offshore-incorporated companies whose main business operations are in China that seek issuance of shares and listing overseas based on their onshore equity, assets or similar interests. As of the date of this annual report, it remains uncertain when the final Administrative Provisions and Filing Measures will be adopted and whether they will be adopted in the current draft form. If the Administrative Provisions and Filing Measures are adopted in the current form, we may be required to file the relevant documents with the CSRC within three business days after submitting their listing application documents to the relevant regulator in the place of intended listing. Failure to complete the filing under the Administrative Provisions and Filing Measures may subject a PRC domestic company to a warning or a fine of RMB1 million to RMB10 million. In the event of a serious violation of the Administrative Provisions, the PRC domestic company may be ordered to discontinue the related business or suspend its operations for rectification, and its permits or business licenses may be revoked.

As of the date of this annual report, we have not received any formal inquiry, notice, warning, sanction, or any regulatory objection from the CSRC, the CAC, or any other PRC regulatory agencies that have jurisdiction over our operations. If the CSRC, the CAC, or other PRC regulatory authorities subsequently determines that we need to obtain their approval or complete the required filing for any future offshore securities offering, or if such government authorities promulgate any interpretation or implement rules that would require us to obtain approvals from the CSRC, the CAC or other regulatory authorities or complete required filing for any future offshore securities offering, it is uncertain whether we can or how long it will take us to obtain such approval or complete such filing, or obtain any waiver of aforesaid requirements if and when procedures are established to obtain such waiver. Any failure to obtain or delay in obtaining such approval or completing such filing for any future offshore securities offering, or a rescission of any such approval obtained by us, could subject us to sanctions by the CSRC, the CAC, or other PRC regulatory agencies for failure to seek approval or other governmental authorization or complete the necessary filing for any future offshore securities offering. In any such event, these regulatory authorities may also impose fines and penalties on our operations in China, limit our operating privileges in China, delay or restrict the repatriation of the proceeds from any future offshore securities offering into the PRC or take other actions that could adversely affect our business, operating results and financial condition, as well as our ability to complete any future offshore securities offering. The CSRC, the CAC or any other PRC government authorities may also take actions requiring us, or making it advisable for us, to halt any future offshore securities offering. Consequently, if you engage in market trading or other activities in anticipation of and prior to settlement and delivery, you do so at the risk that such settlement and delivery may not occur. Any uncertainties or negative publicity regarding such approval requirements could materially and adversely affect the trading price of our ADSs.

Certain PRC regulations may make it more difficult for us to pursue growth through acquisitions.

Among other things, the M&A Rules, adopted by six PRC regulatory agencies in 2006 and amended in 2009, established additional procedures and requirements that could make merger and acquisition activities by foreign investors more time-consuming and complex. Such regulation requires, among other things, that MOFCOM be notified in advance of any change of control transaction in which a foreign investor takes control of a PRC domestic enterprise, if (i) any important industry is concerned, (ii) such transaction involves factors that have or may have impact on the national economic security, or (iii) such transaction will lead to a change in control of a domestic enterprise which holds a famous trademark or PRC time-honored brand. Moreover, the PRC Anti-Monopoly Law promulgated by the Standing Committee of the NPC which became effective in 2008 requires that transactions which are deemed concentrations and involve parties with specified turnover thresholds must be cleared by the relevant anti-monopoly authority before they can be completed. In addition, PRC national security review rules which became effective in September 2011 require acquisitions by foreign investors of PRC companies engaged in military related or certain other industries that are crucial to national security be subject to security review before consummation of any such acquisition. We may pursue potential strategic acquisitions that are complementary to our business and operations. Complying with the requirements of these regulations to complete such transactions could be time-consuming, and any required approval processes, including obtaining approval or clearance from the competent government authority, may delay or inhibit our ability to complete such transactions, which could affect our ability to expand our business or maintain our market share.

Failure to make adequate contributions to various employee benefit plans as required by PRC regulations may subject us to penalties.

We are required under PRC laws and regulations to participate in various government sponsored employee benefit plans, including certain social insurance, housing funds and other welfare-oriented payment obligations, and contribute to the plans in amounts equal to certain percentages of salaries, including bonuses and allowances, of our employees up to a maximum amount specified by the local government from time to time at locations where we operate our businesses. The requirement of employee benefit plans has not been implemented consistently by the local governments in China given the different levels of economic development in different locations, and we cannot assure you that we are able to make adequate contribution for each employee in a timely and appropriate manner at all time. If we fail to make adequate employee benefit payments, we may be subject to fines, late fees and legal sanctions, and our business, financial conditions and results of operations may be adversely affected.

PRC regulations relating to the establishment of offshore special purpose companies by PRC residents may subject our PRC resident beneficial owners or our PRC subsidiaries to liability or penalties, limit our ability to inject capital into our PRC subsidiaries, limit our PRC subsidiaries' ability to increase their registered capital or distribute profits to us, or may otherwise adversely affect us.

In July 2014, SAFE promulgated the Circular on Relevant Issues Concerning Foreign Exchange Control on Domestic Residents' Offshore Investment and Financing and Roundtrip Investment Through Special Purpose Vehicles (the "SAFE Circular No. 37"), to replace the Notice on Relevant Issues Concerning Foreign Exchange Administration for Domestic Residents' Financing and Roundtrip Investment Through Offshore Special Purpose Vehicles, or SAFE Circular 75, which ceased to be effective upon the promulgation of SAFE Circular No. 37. SAFE Circular No. 37 requires PRC residents (including PRC individuals and PRC corporate entities) to register with SAFE or its local branches in connection with their direct or indirect offshore investment activities. SAFE Circular No. 37 is applicable to our shareholders who are PRC residents and may be applicable to any offshore acquisitions that we make in the future.

SAFE Circular No. 37 requires registration with, and approval from, Chinese government authorities in connection with direct or indirect control of an offshore entity by PRC residents. The term "control" under SAFE Circular No. 37 is broadly defined as the operation rights, beneficiary rights or decision-making rights acquired by PRC residents in the offshore special purpose vehicles, or SPVs, by means of acquisition, trust, proxy, voting rights, repurchase, convertible bonds or other arrangements. In addition, any PRC resident who is a direct or indirect shareholder of an SPV is required to update its filed registration with the local branch of SAFE with respect to that SPV, to reflect any material change. On February 13, 2015, the SAFE promulgated a Notice on Further Simplifying and Improving Foreign Exchange Administration Policy on Direct Investment (the "Circular 13") which became effective on June 1, 2015. Under Circular 13, applications for foreign exchange registration of inbound foreign direct investments and outbound overseas direct investments, including those required under SAFE Circular No. 37, will be filed with qualified banks instead of SAFE. The qualified banks will directly examine the applications and accept registrations under the supervision of SAFE.

These regulations may have a significant impact on our present and future structuring and investment. We intend to structure and execute our future offshore acquisitions in a manner consistent with these regulations and any other relevant legislation. However, because it is presently uncertain how the SAFE regulations and any future legislation concerning offshore or cross-border transactions will be interpreted and implemented by the relevant government authorities in connection with our future offshore financings or acquisitions, we cannot provide any assurances that we will be able to comply with, qualify under, or obtain any approvals required by the regulations or other legislation. Furthermore, we cannot assure you that any PRC shareholders of our company or any PRC company into which we invest will be able to comply with those requirements. Any failure or inability by such individuals or entities to comply with SAFE regulations may subject us to fines or legal sanctions, such as restrictions on our cross-border investment activities or our PRC subsidiaries' ability to distribute dividends to, or obtain foreign exchange-denominated loans from, our company or prevent us from making distributions or paying dividends. As a result, our business operations and our ability to make distributions to you could be materially and adversely affected.

Furthermore, as these foreign exchange regulations are still relatively new and their interpretation and implementation has been constantly evolving, it is unclear how these regulations, and any future regulation concerning offshore or cross-border transactions, will be interpreted, amended and implemented by the relevant government authorities. For example, we may be subject to a more stringent review and approval process with respect to our foreign exchange activities, such as remittance of dividends and foreign-currency-denominated borrowings, which may adversely affect our financial condition and results of operations. In addition, if we decide to acquire a PRC domestic company, we cannot assure you that we or the owners of such company, as the case may be, will be able to obtain the necessary approvals or complete the necessary filings and registrations required by the foreign exchange regulations. This may restrict our ability to implement our acquisition strategy and could adversely affect our business and prospects.

Any failure to comply with PRC regulations regarding the registration requirements for employee stock incentive plans may subject the PRC plan participants or us to fines and other legal or administrative sanctions.

In February 2012, SAFE promulgated the Notices on Issues Concerning the Foreign Exchange Administration for Domestic Individuals Participating in Stock Incentive Plan of Overseas Publicly Listed Company, replacing earlier rules promulgated in 2007. Pursuant to these rules, PRC citizens and non-PRC citizens who reside in China for a continuous period of not less than one year who participate in any stock incentive plan of an overseas publicly listed company, subject to a few exceptions, are required to register with SAFE through a domestic qualified agent, which could be the PRC subsidiaries of such overseas-listed company, and complete certain other procedures. In addition, an overseas-entrusted institution must be retained to handle matters in connection with the exercise or sale of stock options and the purchase or sale of shares and interests. In addition, SAFE Circular 37 stipulates that PRC residents who participate in a share incentive plan of an overseas non-publicly-listed special purpose company may register with SAFE or its local branches before they obtain the incentive shares or exercise the share options. We and our executive officers and other employees who are PRC citizens or who reside in the PRC for a continuous period of not less than one year and who have been or will be granted incentive shares or options are or will be subject to these regulations. Failure to complete the SAFE registrations may subject them to fines and legal sanctions, and there may be additional restrictions on the ability of them to exercise their stock options or remit proceeds gained from sale of their stock into the PRC. We also face regulatory uncertainties that could restrict our ability to adopt additional incentive plans for our directors, executive officers and employees under PRC law.

If we are classified as a PRC resident enterprise for PRC enterprise income tax purposes, such classification could result in unfavorable tax consequences to us and our non-PRC shareholders.

Under the PRC Enterprise Income Tax Law (the "EIT Law") and its implementation rules, an enterprise established outside of the PRC with its "de facto management body" within the PRC is considered a "resident enterprise" and will be subject to the enterprise income tax on its global income at the rate of 25%. The implementation rules define the term "de facto management body" as the body that exercises full and substantial control and overall management over the business, productions, personnel, accounts and properties of an enterprise. In 2009, the State Administration of Taxation, or SAT, issued the Notice Regarding the Determination of Chinese-Controlled Offshore Incorporated Enterprises as People's Republic of China Tax Resident Enterprises on the Basis of De Facto Management Bodies (the "SAT Circular 82"), which provides certain specific criteria for determining whether the "de facto management body" of a PRC-controlled enterprise that is incorporated offshore is located in China. Although this circular only applies to offshore enterprises controlled by PRC enterprises or PRC enterprise groups, not those controlled by PRC individuals or foreigners, the criteria set forth in the circular may reflect the SAT's general position on how the "de facto management body" text should be applied in determining the tax resident status of all offshore enterprises.

According to SAT Circular 82, an offshore incorporated enterprise controlled by a PRC enterprise or a PRC enterprise group will be regarded as a PRC tax resident by virtue of having its "de facto management body" in China, and will be subject to PRC enterprise income tax on its global income only if all of the following conditions are met: (i) the primary location of the day-to-day operational management is in the PRC; (ii) decisions relating to the enterprise's financial and human resource matters are made or are subject to approval by organizations or personnel in the PRC; (iii) the enterprise's primary assets, accounting books and records, company seals, and board and shareholder resolutions are located or maintained in the PRC; and (iv) at least 50% of voting board members or senior executives habitually reside in the PRC.

We believe our company is not a PRC resident enterprise for PRC tax purposes. However, the tax resident status of an enterprise is subject to determination by the PRC tax authorities and uncertainties remain with respect to the interpretation of the term "de facto management body." If the PRC tax authorities determine that our company or any of our offshore subsidiaries is a PRC resident enterprise for enterprise income tax purposes, our company or the relevant offshore subsidiaries will be subject to PRC enterprise income on its worldwide income at the rate of 25%. Furthermore, if we are treated as a PRC tax resident enterprise, we will be required to withhold a 10% tax from dividends we pay to our shareholders that are non-resident enterprises, including the holders of the ADSs. In addition, non-resident enterprise shareholders (including holders of our ADSs) may be subject to PRC tax at a rate of 10% on gains realized on the sale or other disposition of the ADSs, if such gain is treated as derived from a PRC source. Furthermore, if we are deemed a PRC resident enterprise, dividends paid to our non-PRC individual shareholders (including the holders of the ADSs) and any gain realized on the transfer of the ADSs by such shareholders may be subject to PRC tax at a rate of 20% (which, in the case of dividends, may be withheld at source by us). These rates may be reduced by an applicable tax treaty, but it is unclear whether our non-PRC shareholders would, in practice, be able to obtain the benefits of any tax treaties between their country of tax residence and the PRC in the event that we are treated as a PRC resident enterprise. Any such tax may reduce the returns on your investment in our ADSs.

We face uncertainty with respect to indirect transfers of equity interests in PRC resident enterprises by their non-PRC resident companies.

On February 3, 2015, the SAT issued the Public Notice Regarding Certain Corporate Income Tax Matters on Indirect Transfer of Properties by Non-Tax Resident Enterprises, or SAT Bulletin 7, which came into effect on February 3, 2015, but will also apply to cases where their PRC tax treatments are not yet concluded. SAT Bulletin 7 redefines the applicable scope to expand the subject of the indirect share transfers to China taxable assets which includes equity investments in PRC resident enterprises, assets of Chinese establishment and immoveable properties in China. In addition, SAT Bulletin 7 has introduced safe harbors for internal group restructurings and the purchase and sale of equity through a public securities market. SAT Bulletin 7 also brings challenges to both foreign transferor and transferee (or other person who is obligated to pay for the transfer) of taxable assets.

On October 17, 2017, the SAT issued the Announcement of the State Administration of Taxation on Issues Concerning the Withholding of Non-resident Enterprise Income Tax at Source, or SAT Bulletin 37, which came into effect on December 1, 2017. The SAT Bulletin 37 further clarifies the practice and procedure of the withholding of non-resident enterprise income tax.

Where a non-resident enterprise transfers taxable asset in China indirectly by disposing of the equity interests of an overseas holding company, which is an Indirect Transfer, the non-resident enterprise as either transferor or transferee, or the PRC entity whose equity is transferred, may report such Indirect Transfer to the relevant tax authority. Using a "substance over form" principle, the PRC tax authority may disregard the existence of the overseas holding company if it lacks a reasonable commercial purpose and was established for the purpose of reducing, avoiding or deferring PRC tax. As a result, gains derived from such Indirect Transfer may be subject to PRC enterprise income tax, and the transferee or other person who is obligated to pay for the transfer is obligated to withhold the applicable taxes, currently at a rate of 10% for the transfer of equity interests in a PRC resident enterprise. Both the transferor and the transferee may be subject to penalties under PRC tax laws if the transferee fails to withhold the taxes and the transferor fails to pay the taxes.

We face uncertainties as to the reporting and other implications of certain past and future transactions where PRC taxable assets are involved, such as offshore restructuring, sale of the shares in our offshore subsidiaries and investments. Our company may be subject to filing obligations or taxed if our company is transferor in such transactions, and may be subject to withholding obligations if our company is transferee in such transactions, under SAT Bulletin 7 and/or SAT Bulletin 37. For transfer of shares in our company that do not qualify for the public securities market safe harbor by investors who are non-PRC resident enterprises, our PRC subsidiaries may be requested to assist in the filing under SAT Bulletin 7 and/or SAT Bulletin 37. As a result, we may be required to expend valuable resources to comply with SAT Bulletin 7 and/or SAT Bulletin 37 or to request the relevant transferors from whom we purchase taxable assets to comply with these circulars, or to establish that our company should not be taxed under these circulars, which may have a material adverse effect on our financial condition and results of operations.

Regulation and censorship of information disseminated over the internet in China may adversely affect our business and reputation and subject us to liability for information displayed on our website.

China has enacted laws and regulations governing Internet access and the distribution of products, services, news, information, audio-video programs and other content through the Internet. In the past, the PRC government has prohibited the distribution of information through the internet that it deems to be in violation of PRC laws and regulations. If any of the information offered on our platform was deemed by the PRC government to violate any content restrictions, we would not be able to continue to display such content and could become subject to penalties, including confiscation of income, fines, suspension of business and revocation of required licenses, which could materially and adversely affect our business, financial condition and results of operations.

The PCAOB is currently unable to inspect our auditor in relation to their audit work performed for our financial statements and the inability of the PCAOB to conduct inspections over our auditor deprives our investors with the benefits of such inspections.

Our external auditor, the independent registered public accounting firm that issues the audit report included elsewhere in this annual report, as an auditor of companies that are traded publicly in the United States and a firm registered with the PCAOB, is subject to laws in the United States pursuant to which the PCAOB conducts regular inspections to assess its compliance with the applicable professional standards. Since our external auditor is located in China, a jurisdiction where the PCAOB has been unable to conduct inspections without the approval of the Chinese authorities, our external auditor is not currently inspected by the PCAOB.

As a result, we and investors in our ADSs are deprived of the benefits of such PCAOB inspections. The inability of the PCAOB to conduct inspections of auditors in China makes it more difficult to evaluate the effectiveness of our independent registered public accounting firm's audit procedures or quality control procedures as compared to auditors outside of China that are subject to the PCAOB inspections, which could cause investors and potential investors in our ADSs to lose confidence in our audit procedures and reported financial information and the quality of our financial statements.

Our ADSs will be prohibited from trading in the United States under the Holding Foreign Companies Accountable Act, or the HFCAA, in 2024, if the PCAOB is unable to inspect or fully investigate auditors located in China, or 2023, if proposed changes to the law are enacted. The delisting of our ADSs, or the threat of their being delisted, may materially and adversely affect the value of your investment.

The Holding Foreign Companies Accountable Act, or the HFCAA, was signed into law on December 18, 2020. The HFCAA states if the SEC determines that we have filed audit reports issued by a registered public accounting firm that has not been subject to inspection for the PCAOB for three consecutive years beginning in 2021, the SEC shall prohibit our shares or ADSs from being traded on a national securities exchange or in the over-the-counter trading market in the United States. On December 16, 2021, the PCAOB issued a report to notify the SEC of its determination that the PCAOB is unable to inspect or investigate completely registered public accounting firms headquartered in mainland China and Hong Kong. The PCAOB identified our external auditor as one of the registered public accounting firms that the PCAOB is unable to inspect or investigate completely.

The HFCAA requires the SEC to identify and maintain a list of U.S. listed companies whose audit reports are prepared by auditors that the PCAOB is unable to inspect or investigate completely because of restrictions imposed by the authorities in the foreign jurisdiction. The SEC has begun identifying issuers pursuant to the HFCAA, and those companies included in the "Conclusive list of issuers identified under the HFCAA" are now formally subject to the delisting provisions if they remain on the list for three consecutive years. We anticipate being added to the list shortly after the filing of this annual report on Form 20-F.

On June 22, 2021, the U.S. Senate passed the Accelerating Holding Foreign Companies Accountable Act, which, if signed into law, would reduce the number of consecutive non-inspection years required for triggering the prohibitions under the HFCAA from three years to two. On February 4, 2022, the U.S. House of Representatives passed the America COMPETES Act of 2022, which contained, among other things, an identical provision. However, the America COMPETES Act includes a broader range of legislation not related to the HFCAA in response to the U.S. Innovation and Competition Act passed by the U.S. Senate in 2021. The U.S. House of Representatives and U.S. Senate will need to agree on amendments to these respective bills to align the legislation and pass their amended bills before the U.S. President can sign into law. It is unclear when the U.S. Senate and U.S. House of Representatives will resolve the differences in the U.S. Innovation and Competition Act and the America COMPETES Act of 2022 bills currently passed, or when the U.S. President will sign on the bill to make the amendment into law, or at all. If the bill amending the HFCAA is enacted into law and the number of consecutive non-inspection years required for triggering the prohibitions under the HFCAA is reduced from three years to two, then our shares and ADSs could be prohibited from trading in the United States in 2023.

The HFCAA or other efforts to increase U.S. regulatory access to audit information could cause investor uncertainty for affected issuers, including us, and the market price of the ADSs could be adversely affected. Additionally, whether the PCAOB will be able to conduct inspections of our external auditor before the issuance of our financial statements on Form 20-F for the year ending December 31, 2023 which is due by April 30, 2024, or at all, is subject to substantial uncertainty and depends on a number of factors out of our, and our external auditor's, control. If our shares and ADSs are prohibited from trading in the United States, there is no certainty that we will be able to list on a non-U.S. exchange or that a market for our shares will develop outside of the United States. Such a prohibition would substantially impair your ability to sell or purchase our ADSs when you wish to do so, and the risk and uncertainty associated with delisting would have a negative impact on the price of our ADSs. Also, such a prohibition would significantly affect our ability to raise capital on terms acceptable to us, or at all, which would have a material adverse impact on our business, financial condition, and prospects.

Risks Related to Our ADSs

The price and trading volume of our ADSs may be volatile, which could lead to substantial losses to investors.

The trading price of the ADSs has been volatile since the ADSs started to trade on the NYSE on March 18, 2021. The trading price of the ADSs could continue to fluctuate widely due to factors beyond our control. In particular, the business and performance and the market price of the shares of other companies engaging in similar business to ours or those with operations located mainly in China that have listed their securities in the United States may affect the price and trading volume of our ADSs. In addition to market and industry factors, the price and trading volume of our ADSs may be highly volatile for factors specific to our own operations, including the following:

- variations in our revenues, earnings, or cash flow;
- fluctuations in operating metrics;
- announcements of new investments, acquisitions, strategic partnerships, capital raisings or capital commitments or joint ventures by us or our competitors;
- announcements of new solutions and services and expansions by us or our competitors;
- changes in financial estimates by securities analysts;
- detrimental negative publicity about us, our competitors or our industry;
- announcements of new regulations, rules or policies relevant to our business;
- additions or departures of key personnel;
- allegations of a lack of effective internal control over financial reporting, inadequate corporate governance policies, or allegations of fraud, among other things, involving China-based issuers;
- our major shareholders' business performance and reputation;
- release of lock-up or other transfer restrictions on our outstanding equity securities or sales of additional equity securities;
- regulatory developments affecting us or our industry;
- political or trade tensions between the United States and China;
- potential litigation or regulatory investigations;
- fluctuations of exchange rate between Renminbi and the U.S. dollar; and
- sales or perceived potential sales of additional Class A Ordinary Shares or ADSs.

Any of these factors may result in large and sudden changes in the volume and price at which our ADSs will trade. Furthermore, the stock exchanges on which our ADSs are traded in general experience price and volume fluctuations that are often unrelated or disproportionate to the operating performance of companies like us. These broad market and industry fluctuations may adversely affect the market price of our ADSs.

In the past, shareholders of public companies have often brought securities class action suits against companies following periods of instability in the market price of their securities. If we were involved in a class action suit, it could

divert a significant amount of our management's attention and other resources from our business and operations and require us to incur significant expenses to defend the suit, which could harm our results of operations. Any such class action suit, whether successful or not, could harm our reputation and restrict our ability to raise capital in the future. In addition, if a claim is successfully made against us, we may be required to pay significant damages, which could have a material adverse effect on our financial condition and results of operations.

The concentration of our shares' voting power limited our shareholders' ability to influence corporate matters.

We have a dual-class share structure such that our ordinary shares will consist of Class A ordinary shares and Class B ordinary shares. Each Class A Ordinary Share carries only one fifteenth of the voting rights of each Class B Ordinary Share. As of December 31, 2021, Mr. Wang and Mr. Chen beneficially owned 63,000,000 Class A Ordinary Shares and 79,400,000 Class B Ordinary Shares, representing approximately 75.2% of the aggregate voting power of our total issued and outstanding share capital. As a result, Mr. Wang and Mr. Chen as a group have significant influence over our business, including decisions regarding mergers, consolidations, liquidations and the sale of all or substantially all of our assets, election of directors and other significant corporate actions. This concentrated control limits or severely restricts our shareholders' ability to influence corporate matters and, as a result, we may take actions that our shareholders do not view as beneficial. As a result, the market price of the ADSs could be adversely affected. This concentrated control could discourage others from pursuing any potential merger, takeover, or other change of control transactions that holders of Class B Ordinary Shares may view as beneficial, and may also discourage, delay, or prevent a change of control of our Company, which could have the effect of depriving our other shareholders of the opportunity to receive a premium for their Shares as part of a sale of our Company and may reduce the price of our ADSs.

Holders of the ADSs may not have the same voting rights as the holders of our Class A Ordinary Shares and may not be able to exercise their right to direct how our Class A Ordinary Shares represented by the ADSs are voted.

Holders of the ADSs do not have the same rights as our registered shareholders. Holders of the ADSs will not have any direct right to attend general meetings of our shareholders or to cast any votes at such meetings and will only be able to exercise the voting rights that are carried by the underlying Class A Ordinary Shares represented by the ADSs indirectly by giving voting instructions to the depositary in accordance with the provisions of the deposit agreement. Under the deposit agreement, holders of the ADSs may vote only by giving voting instructions to the depositary. If we instruct the depositary to ask holders of the ADSs for their instructions, then upon receipt of voting instructions from holders of the ADSs, the depositary will try, as far as practicable, to vote the underlying Class A Ordinary Shares represented by the ADSs in accordance with the instructions. If we do not instruct the depositary to ask holders of the ADSs for their instructions, the depositary may still vote in accordance with instructions give, but it is not required to do so. Holders of the ADSs will not be able to directly exercise their right to vote with respect to the Class A Ordinary Shares represented by the ADSs unless holders of the ADSs withdraw the shares and become the registered holder of such shares prior to the record date for the general meeting. Under the Articles, the minimum notice period required to be given by our company to our registered shareholders for convening a general meeting is seven business days.

When a general meeting is convened, holders of the ADSs may not receive sufficient advance notice of the meeting to surrender their ADSs for the purpose of withdrawal of our Class A Ordinary Shares represented by such ADSs and become the registered holder of such shares to allow them to vote directly with respect to any specific matter or resolution to be considered and voted upon at the general meeting. In addition, for the purposes of determining those shareholders who are entitled to attend and vote at any general meeting, our directors may close our register of members and fix in advance a record date for such meeting, and such closure of our register of members or the setting of such a record date may prevent holders of the ADSs from surrendering ADSs for the purpose of withdrawing our Class A Ordinary Shares represented by such ADSs and becoming the registered holder of such shares prior to the record date, so that they would not be able to attend the general meeting or to vote directly. If we ask for instructions, the depositary will notify holders of the ADSs of the upcoming vote and will arrange to deliver our voting materials to them. We have agreed to give the depositary at least 40 days' prior notice of shareholder meetings. Nevertheless, there is no guarantee that holders of the ADSs will receive the voting materials in time to ensure that holders of the ADSs can instruct the depositary to vote the Class A Ordinary Shares represented by their ADSs. In addition, the depositary and its agents are not responsible for failing to carry out voting instructions or for their manner of carrying out voting instructions from holders of the ADSs. This means that holders of the ADSs may not be able to exercise their right to direct how our Class A Ordinary Shares represented by their ADSs are voted and they may have no legal remedy if our Class A Ordinary Shares represented by their ADSs are not voted as they have requested.

Our dual-class voting structure may render our securities ineligible for inclusion in certain stock market indices, and thus adversely affect the trading price and liquidity of our ADSs.

We cannot predict whether our dual-class share structure with different voting rights will result in a lower or more volatile market price of our ADSs, in adverse publicity, or other adverse consequences. Certain index providers have announced restrictions on including companies with multi-class share structures in certain of their indices. For example, S&P Dow Jones and FTSE Russell have changed their eligibility criteria for inclusion of shares of public companies on certain indices, including the S&P 500, to exclude companies with multiple classes of shares and companies whose public shareholders hold no more than 5% of total voting power from being added to such indices. As a result, our dual-class voting structure may prevent the inclusion of our securities in such indices, which could adversely affect the trading price and liquidity of our securities. In addition, several shareholder advisory firms have announced their opposition to the use of multiple class structure and our dual-class structure may cause shareholder advisory firms to publish negative commentary about our corporate governance, in which case the market price and liquidity of our ADSs could be adversely affected.

If securities or industry analysts do not publish research or reports about our business, or if they adversely change their recommendations regarding our securities, the market price for our ADSs and trading volume could decline.

The trading market for our ADSs depends in part on the research and reports that securities or industry analysts publish about us or our business. If research analysts do not establish and maintain adequate research coverage or if one or more of the analysts who covers us downgrades our ADSs or publishes inaccurate or unfavorable research about our business, the market price for our ADSs would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which, in turn, could cause the market price or trading volume for our ADSs to decline.

Substantial future sales or perceived sales of our ADSs could materially and adversely affect their market price.

Sales of our ADSs in the public market, or the perception that these sales could occur, could cause the market price of our securities to decline. Shares held by our existing shareholders may be available for sale subject to the volume and other restrictions as applicable provided in Rules 144 and 701 under the Securities Act and the applicable lock-up agreements. We cannot predict what effect, if any, market sales of securities held by our significant shareholders or any other shareholder or the availability of these securities for future sale will have on the market price of our ADSs.

We have granted equity-based awards to certain management, employees and non-employees. In addition, we adopted a share incentive plan in 2015, or the 2015 Plan, under which we may have the discretion to grant a range of equity-based awards to eligible participants. We have registered all ordinary shares that we have issued or that we may issue in connection with any employee share-based awards under the 2015 Plan. If ADSs representing a large number of our ordinary shares or securities convertible into our ordinary shares are sold in the public market after they become eligible for sale, the sales could reduce the trading price of the ADSs and impede our ability to raise future capital. In addition, any ordinary shares that we issue under our share incentive plan would dilute the percentage ownership held by investors who purchase the ADSs.

Certain holders of our ordinary shares have the right to cause us to register under the Securities Act the sale of their shares. Registration of these shares under the Securities Act would result in ADSs representing these shares becoming freely tradable without restriction under the Securities Act immediately upon the effectiveness of the registration. Sales of these registered shares in the form of ADSs in the public market could cause the price of our ADSs to decline.

Techniques employed by short sellers may drive down the market price of our ADSs.

Short selling is the practice of selling securities that the seller does not own but rather has borrowed from a third party with the intention of buying identical securities back at a later date to return to the lender. Short sellers hope to profit from a decline in the price of the securities between the sale of the borrowed securities and the purchase of the replacement shares, as short sellers expect to pay less in that purchase than it received in the sale. As it is in the short sellers' interest for the price of the security to decline, many short sellers publish, or arrange for the publication of, negative opinions regarding the relevant issuer and its business prospects in order to create negative market momentum and generate profits for themselves after selling a security short. These short attacks have, in the past, led to selling of shares in the public companies that have substantially all of their operations in China have been the subject of short selling. Much of the scrutiny and negative publicity has centered on allegations of a lack of effective internal control over financial reporting resulting in financial and accounting irregularities and mistakes, inadequate corporate governance policies or a lack of adherence thereto and, in many cases, allegations of fraud. As a result, many of these companies are now conducting internal and external investigations into the allegations and, in the interim, are subject to shareholder lawsuits and/or enforcement actions by the SEC or other U.S. authorities. It is not clear what effect such negative publicity could have on us. If we were to become the subject of any unfavorable allegations, whether such allegations are proven to be true or untrue, we could have to expend a significant amount of resources to investigate such allegations and/or defend ourselves. While we would strongly defend against any such short seller attacks, we may be constrained in the manner in which we can proceed against the relevant short seller by principles of freedom of speech, applicable state law or issues of commercial confidentiality. Such a situation could be costly and time-consuming, and could distract our management from growing our business. Even if such allegations are ultimately proven to be groundless, allegations against us could severely impact our business operations, and any investment in our ADSs could be greatly reduced or even rendered worthless.

Because we do not expect to pay dividends in the foreseeable future, you must rely on a price appreciation of our ADSs for a return on your investment.

We do not expect to pay any cash dividends in the foreseeable future. Therefore, you should not rely on an investment in our ADSs as a source for any future dividend income. Our Board has complete discretion as to whether to distribute dividends. Even if our Board decides to declare and pay dividends, the timing, amount and form of future dividends, if any, will depend on our future results of operations and cash flow, our capital requirements and surplus, the amount of distributions (if any) received by us from our subsidiaries, our financial condition, contractual restrictions and other factors deemed relevant by our Board. Accordingly, the return on your investment in our ADSs will likely depend entirely upon any future price appreciation of such securities. There is no guarantee that our ADSs will appreciate in value or even maintain the price at which you purchased them. You may not realize a return on your investment in our ADSs and you may even lose your entire investment.

You may face difficulties in protecting your interests, and your ability to protect your rights through U.S. courts may be limited, because we are incorporated under Cayman Islands law.

We are an exempted company incorporated under the laws of the Cayman Islands. Our corporate affairs are governed by the Articles, the Companies Act (2020 Revision) of the Cayman Islands and the common law of the Cayman Islands. The rights of shareholders to take action against our directors, actions by our minority shareholders and the fiduciary duties of our directors to us under Cayman Islands law are to a large extent governed by the common law of the Cayman Islands. The common law of the Cayman Islands is derived in part from comparatively limited judicial precedent in the Cayman Islands as well as from the common law of England and Wales, the decisions of whose courts are of persuasive authority, but are not binding, on a court in the Cayman Islands. The rights of our shareholders and the fiduciary duties of our directors under Cayman Islands law are not as clearly established as they would be under statutes or judicial precedent in the United States. In particular, the Cayman Islands have a less developed body of securities laws than the United States. Some U.S. states, such as Delaware, have more fully developed and judicially interpreted bodies of corporate law than the Cayman Islands. In addition, Cayman Islands companies may not have standing to initiate a shareholder derivative action in a federal court of the United States. Moreover, while under Delaware law, controlling shareholders owe fiduciary duties to the companies they control and their minority shareholders, under Cayman Islands law, our controlling shareholders do not owe any such fiduciary duties to our company or to our minority shareholders. Accordingly, our controlling shareholders may exercise their powers as shareholders, including the exercise of voting rights in respect of their shares, in such manner as they think fit.

Shareholders of Cayman Islands exempted companies like us have no general rights under Cayman Islands law to inspect corporate records (other than the Articles, the register of mortgages and charges and any special resolutions passed by shareholders) or to obtain copies of lists of shareholders of these companies. Our directors have discretion under our articles of association to determine whether or not, and under what conditions, our corporate records may be inspected by our shareholders, but are not obliged to make them available to our shareholders. This may make it more difficult for you to obtain the information needed to establish any facts necessary for a shareholder motion or to solicit proxies from other shareholders in connection with a proxy contest.

As a result of all of the above, our public shareholders may have more difficulty in protecting their interests in the face of actions taken by our management, members of the board of directors or controlling shareholders than they would as public shareholders of a company incorporated in the United States.

It may be difficult for overseas regulators to conduct investigations or collect evidence within China.

Shareholder claims or regulatory investigation that are common in the United States generally are difficult to pursue as a matter of law or practicality in China. For example, in China, there are significant legal and other obstacles to providing information needed for regulatory investigations or litigation initiated outside China. In the absence of mutual and practical cooperation mechanism, there has not been efficient regulatory cooperation between the local authorities in China and the securities regulatory authorities in the United States to implement cross-border supervision and administration so far. Furthermore, according to Article 177 of the PRC Securities Law, or Article 177, which became effective in March 2020, no overseas securities regulator is allowed to directly conduct investigation or evidence collection activities within the territory of the PRC. While detailed interpretation of or implementation rules under Article 177 have yet to be promulgated, the inability for an overseas securities regulator to directly conduct investigation or evidence collection activities within China may further increase difficulties faced by you in protecting your interests.

Certain judgments obtained against us by our shareholders may not be enforceable.

We are an exempted company limited by shares incorporated under the laws of the Cayman Islands and substantially all of our assets are located outside of the United States. Substantially all of our current operations are conducted in China. In addition, some of our current directors and officers are nationals and residents of countries other than the United States. Most of the assets of these persons are located outside the United States. As a result, it may be difficult or impossible for you to bring an action against us or against these individuals in the United States in the event that you believe that your rights have been infringed under the U.S. federal securities laws or otherwise. Even if you are successful in bringing an action of this kind, the laws of the Cayman Islands and of China may render you unable to enforce a judgment against our assets or the assets of our directors and officers.

Holders of the ADSs may not receive cash dividends if the depositary decides it is impractical to make them available to such holders.

The depositary will pay cash dividends on the ADSs only to the extent that we decide to distribute dividends on our ordinary shares or other deposited securities, and we do not have any present plan to pay any cash dividends on our ordinary shares in the foreseeable future. To the extent that there is a distribution, the depositary of the ADSs has agreed to pay to holders of the ADSs the cash dividends or other distributions it or the custodian receives on our ordinary shares or other deposited securities after deducting its fees and expenses. Holders of the ADSs will receive these distributions in proportion to the number of ordinary shares the ADSs represent. However, the depositary may, at its discretion, decide that it is inequitable or impractical to make a distribution available to any holders of the ADSs. For example, the depositary may determine that it is not practicable to distribute certain property through the mail, or that the value of certain distributions may be less than the cost of mailing them. In these cases, the depositary may decide not to distribute such property to holders of the ADSs.

Holders of the ADSs may not be entitled to a jury trial with respect to claims arising under the deposit agreement, which could result in less favorable outcomes to the plaintiff(s) in any such action.

The deposit agreement governing the ADSs representing our Class A Ordinary Shares provides that, to the fullest extent permitted by law, holders of the ADS waive the right to a jury trial for any claim they may have against us or the depositary arising out of or relating to our shares, the ADSs or the deposit agreement, including any claim under the U.S. federal securities laws.

If we or the depositary were to oppose a jury trial based on this waiver, the court would have to determine whether the waiver was enforceable based on the facts and circumstances of the case in accordance with applicable state and federal law. To our knowledge, the enforceability of a contractual pre-dispute jury trial waiver in connection with claims arising under the federal securities laws has not been finally adjudicated by the United States Supreme Court. However, we believe that a contractual pre-dispute jury trial waiver provision is generally enforceable, including under the laws of the State of New York, which govern the deposit agreement, or by a federal or state court in the City of New York, which has non-exclusive jurisdiction over matters arising under the deposit agreement. In determining whether to enforce a contractual pre-dispute jury trial waiver, courts will generally consider whether a party knowingly, intelligently and voluntarily waived the right to a jury trial. We believe that this would be the case with respect to the deposit agreement and the ADSs. It is advisable that you consult legal counsel regarding the jury waiver provision before investing in the ADSs.

If owners or holders of the ADSs bring a claim against us or the depositary in connection with matters arising under the deposit agreement or the ADSs, including claims under federal securities laws, owners or holders of the ADSs may not be entitled to a jury trial with respect to such claims, which may have the effect of limiting and discouraging lawsuits against us or the depositary. If a lawsuit is brought against us or the depositary under the deposit agreement, it may be heard only by a judge or justice of the applicable trial court, which would be conducted according to different civil procedures and may result in different outcomes than a trial by jury would have, including outcomes that could be less favorable to the plaintiff(s) in any such action.

Nevertheless, if this jury trial waiver is not permitted by applicable law, an action could proceed under the terms of the deposit agreement with a jury trial. No condition, stipulation or provision of the deposit agreement or the ADSs serves as a waiver by any owners or holders of the ADSs or by us or the depositary of compliance with any substantive provision of the U.S. federal securities laws and the rules and regulations promulgated thereunder.

Holders of the ADSs may experience dilution of their holdings due to the inability to participate in rights offerings.

We may, from time to time, distribute rights to our shareholders, including rights to acquire securities. However, we cannot make such rights available to holders of the ADSs in the United States unless we register both the rights and the securities to which the rights relate under the Securities Act or an exemption from the registration requirements is available. Under the deposit agreement, the depositary will not distribute rights to holders of the ADSs unless the distribution and sale of rights and the securities to which these rights relate are either exempt from registration under the Securities Act with respect to all holders of the ADSs, or are registered under the provisions of the Securities Act. The depositary may, but is not required to, attempt to sell these undistributed rights to third parties, and may allow the rights to lapse. We may be unable to establish an exemption from registration under the Securities Act, and we are under no obligation to file a registration statement with respect to these rights or underlying securities or to endeavor to have a registration statement declared effective. Accordingly, holders of the ADSs may be unable to participate in our rights offerings and may experience dilution of their holdings as a result.

Holders of the ADSs may be subject to limitations on the transfer of the ADSs.

The ADSs are transferable on the books of the depositary. However, the depositary may close its books at any time or from time to time when it deems it expedient in connection with the performance of its duties. The depositary may also close its books in emergencies, and on weekends and public holidays. The depositary may refuse to deliver, transfer or register transfers of the ADSs generally when our share register or the books of the depositary are closed, or at any time if we or the depositary thinks it is advisable to do so because of any requirement of law or of any government or governmental body, or under any provision of the deposit agreement, or for any other reason.

We are an emerging growth company within the meaning of the Securities Act and may take advantage of certain reduced reporting requirements.

We are an "emerging growth company," as defined in the JOBS Act, and we may take advantage of certain exemptions from requirements applicable to other public companies that are not emerging growth companies, including, most significantly, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002 for so long as we remain an emerging growth company. As a result, if we elect not to comply with such auditor attestation requirements, our investors may not have access to certain information they may deem important.

Our Articles give us power to take certain actions that could discourage a third party from acquiring us, which could limit your opportunity to sell your Shares, including ADSs, at a premium.

Our Articles contain provisions to limit the ability of others to acquire control of our Company or cause us to engage in change-of-control transactions. These provisions could have the effect of depriving our shareholders of an opportunity to sell their shares at a premium over prevailing market prices by discouraging third parties from seeking to obtain control of our Company in a tender offer or similar transaction. Our Board has the authority, without further action by our shareholders, to issue preferred shares in one or more series and to fix their designations, powers, preferences, privileges and relative participating, optional or special rights and the qualifications, limitations or restrictions, including dividend rights, conversion rights, voting rights, terms of redemption and liquidation preferences, any or all of which may be greater than the rights associated with our Class A Ordinary Shares, including Class A Ordinary Shares represented by ADSs. Preferred shares could be issued quickly with terms calculated to delay or prevent a change in control of our Company or make removal of management more difficult. If our Board decides to issue preferred shares, the price of our ADSs may fall and the voting and other rights of the holders of our ADSs may be materially and adversely affected.

We are a foreign private issuer within the meaning of the rules under the Exchange Act, and as such we are exempt from certain provisions applicable to U.S. domestic public companies.

Because we qualify as a foreign private issuer under the Exchange Act, we are exempt from certain provisions of the securities rules and regulations in the United States that are applicable to U.S. domestic issuers, including:

- the rules under the Exchange Act requiring the filing with the SEC of quarterly reports on Form 10-Q or current reports on Form 8-K;
- the sections of the Exchange Act regulating the solicitation of proxies, consents or authorizations in respect of a security registered under the Exchange Act;
- the sections of the Exchange Act requiring insiders to file public reports of their stock ownership and trading activities and liability for insiders who profit from trades made in a short period of time; and
- the selective disclosure rules by issuers of material nonpublic information under Regulation FD.

We are required to file an annual report on Form 20-F within four months of the end of each fiscal year. In addition, we intend to publish our results on a quarterly basis as press releases, distributed pursuant to the rules and regulations of the NYSE. Press releases relating to financial results and material events will also be furnished to the SEC on Form 6-K. However, the information we are required to file with or furnish to the SEC will be less extensive and less timely compared to that required to be filed with the SEC by U.S. domestic issuers. As a result, you may not be afforded the same protections or information that would be made available to you were you investing in a U.S. domestic issuer, which may be difficult for overseas regulators to conduct investigation or collect evidence within China.

We will incur increased costs as a public company, particularly after we cease to qualify as an "emerging growth company" as such term is defined under as the JOBS Act of the United States.

As a public company, we incur significant legal, accounting and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act of 2002, as well as rules subsequently implemented by the SEC and NYSE, impose various requirements on the corporate governance practices of public companies.

We expect these rules and regulations to increase our legal and financial compliance costs and to make some corporate activities more time-consuming and costly. For example, as a public company, we have increased the number of independent directors and adopt policies regarding internal controls and disclosure controls and procedures. We also expect that operating as a public company will make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. In addition, we have incurred, and will continue to incur, additional costs associated with our public company reporting requirements. It may also be more difficult for us to find qualified persons to serve on our board of directors or as executive officers. We are currently evaluating and monitoring developments with respect to these rules and regulations, and we cannot predict or estimate with any degree of certainty the amount of additional costs we may incur or the timing of such costs.

As a company with less than US$1.07 billion in revenues for our last fiscal year, we qualify as an "emerging growth company" pursuant to the JOBS Act. An emerging growth company may take advantage of specified reduced reporting and other requirements that are otherwise applicable generally to public companies. These provisions include exemption from the auditor attestation requirement under Section 404 of the Sarbanes-Oxley Act of 2002 in the assessment of the emerging growth company's internal control over financial reporting and permission to delay adopting new or revised accounting standards until such time as those standards apply to private companies. After we are no longer an "emerging growth company", we expect to incur significant expenses and devote substantial management effort toward ensuring compliance with the requirements of Section 404 of the Sarbanes-Oxley Act of 2002 and the other rules and regulations of the SEC.

In the past, shareholders of a public company often brought securities class action suits against the company following periods of instability in the market price of that company's securities. If we were involved in a class action suit, it could divert a significant amount of our management's attention and other resources from our business and operations, which could harm our results of operations and require us to incur significant expenses to defend the suit. Any such class action suit, whether or not successful, could harm our reputation and restrict our ability to raise capital in the future. In addition, if a claim is successfully made against us, we may be required to pay significant damages, which could have a material adverse effect on our financial condition and results of operations.

As an exempted company incorporated in the Cayman Islands, we are permitted to adopt certain home country practices in relation to corporate governance matters that differ significantly from the NYSE corporate governance listing standards. These practices may afford less protection to shareholders than they would enjoy if we complied fully with the NYSE corporate governance listing standards.

As a Cayman Islands exempted company listed on the NYSE, we are subject to corporate governance listing standards of NYSE. However, NYSE rules permit a foreign private issuer like us to follow the corporate governance practices of its home country. Certain corporate governance practices in the Cayman Islands, which is our home country, may differ significantly from the NYSE corporate governance listing standards. We have followed Cayman Islands corporate governance practices in lieu of the corporate governance requirements of the NYSE that listed companies must have: (i) a majority of independent directors; (ii) the establishment of a nominating/corporate governance committee composed entirely of independent directors; (iii) a compensation committee composed entirely of independent directors; and (iv) an audit committee composed of at least three members. To the extent that we choose to follow home country practice, our shareholders may be afforded less protection than they otherwise would enjoy under NYSE corporate governance listing standards applicable to U.S. domestic issuers.

Although believe we were not a passive foreign investment company ("PFIC") for 2021, due to our ADSs' price fluctuations there is a significant risk that we will be a PFIC for 2022 or any future taxable year, which could result in adverse U.S. federal income tax consequences to U.S. investors in the ADSs or Class A ordinary shares.

In general, a non-U.S. corporation is a PFIC for any taxable year in which (i) 75% or more of its gross income consists of passive income or (ii) 50% or more of the average value of its assets (generally determined on a quarterly basis) consists of assets that produce, or are held for the production of, passive income. For purposes of the above calculations, a non-U.S. corporation that owns (or is treated as owning for U.S. federal income tax purposes), directly or indirectly, at least 25% by value of the shares of another corporation is treated as if it held its proportionate share of the assets of the other corporation and received directly its proportionate share of the income of the other corporation. Passive income generally includes dividends, interest, rents, royalties and certain gains. Cash is generally a passive asset for these purposes. The value of a company's goodwill is an active asset under the PFIC rules to the extent attributable to activities that produce active income.

Based on the composition of our income and assets and the estimated value of our assets, including goodwill, which is based on the average price of the ADSs during 2021, we believe that we were not a PFIC for our taxable year ended December 31, 2021. However, our PFIC status for any taxable year is an annual factual determination that can be made only after the end of that year and depends on the composition of our income and assets and the value of our assets from time to time. We hold a substantial amount of cash and while that continues to be the case our PFIC status for any taxable year will depend primarily on the average value of our goodwill. The value of our goodwill may be determined, in large part, by reference to our market capitalization. Because our market capitalization has declined substantially since our initial public offering, if the value of our goodwill is determined by reference to our market capitalization and the market price of the ADSs does not increase sufficiently, there is a significant risk that we will be a PFIC for our taxable year 2022, and possibly future taxable years. Moreover, it is not entirely clear how the contractual arrangements between us and the VIE will be treated for purposes of the PFIC rules, and we may be or become a PFIC if the VIE is not treated as owned by us for these purposes. For these reasons, there can be no assurance that we will not be a PFIC for our current or any future taxable year.

If we are a PFIC for any taxable year during which a U.S. taxpayer holds ADSs or Class A ordinary shares, the U.S. taxpayer generally will be subject to adverse U.S. federal income tax consequences, including increased tax liability on disposition gains and "excess distributions," and additional reporting requirements. This will generally continue to be the case even if we ceased to be a PFIC in a later taxable year, unless certain elections are made. See "Item 10. Additional Information—10.E. Taxation—Material U.S. Federal Income Tax Considerations—*Passive Foreign Investment Company Rules*."

Your investment in our ADSs may be impacted if we are encouraged to issue CDRs in the future.

PRC government authorities have issued new rules that allow PRC technology companies listed outside China to list on the mainland stock market through the creation of Chinese Depositary Receipts, or CDRs. However, as the CDR mechanism is newly established, there are substantial uncertainties in the interpretation and implementation of these rules. We might consider and be encouraged by the evolving PRC governmental policies to issue CDRs and allow investors to trade our CDRs on PRC stock exchanges in the future. However, there are uncertainties as to whether a pursuit of CDRs in China would bring positive or negative impact on your investment in our ADSs.

ITEM 4. INFORMATION ON THE COMPANY

4.A. History and Development of the Company

We commenced our operations in June 2014 through Hangzhou Tuya Technology Co., Ltd., or Hangzhou Tuya Technology.

In August 2014, Tuya, Inc., our current ultimate holding company, was incorporated under the laws of the Cayman Islands.

In September 2014, Tuya (HK) Limited, currently a wholly-owned subsidiary of Tuya Inc., was incorporated under the laws of Hong Kong.

In December 2014, Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.), or Tuya Information, was incorporated in the PRC. Tuya Information is currently a wholly-owned subsidiary of Tuya (HK) Limited.

In June 2018, we effected a 10-for-1 share subdivision, following which each of our issued and unissued ordinary shares and preferred shares was subdivided into ten ordinary shares and preferred shares, respectively.

In March 2021, our ADSs commenced trading on the NYSE under the symbol "TUYA." We raised, from our initial public offering and from the underwriters' exercise of option to purchase additional ADSs, approximately US$904.7 million in net proceeds after deducting underwriting commissions and the offering expenses paid by us.

4.B. Business Overview

OVERVIEW

We established the world's first IoT cloud development platform, according to China Insights Consultancy ("CIC"). Through our IoT cloud development platform, we deliver a variety of offerings. Our IoT PaaS enables brands, OEMs, and developers to develop, launch, manage and monetize smart devices and services. Our Industry SaaS offering enables businesses to deploy, connect, and manage large numbers and different types of smart devices. We also offer businesses, developers and end users a diverse range of cloud-based value-added services to improve their ability to develop and manage IoT experiences.

Through our IoT cloud development platform, we have enabled developers to activate an IoT ecosystem of brands, OEMs, partners and end users to engage and communicate through a broad range of smart devices.

We have cultivated a large and diversified customer base. We had approximately 5,000 and 8,400 customers, respectively, in 2020 and 2021, primarily including brands, OEMs, industry operators and system integrators. For the same periods, our IoT PaaS empowered approximately 2,700 and 4,100 brands, respectively, to develop their smart devices, including leading brands such as Calex, Philips and Schneider Electric. Our IoT PaaS currently enables businesses and developers across over 200 countries and regions globally to develop smart devices in more than 2,200 categories. We were the largest IoT PaaS provider in the global market of IoT PaaS in terms of the volume of smart devices powered in 2021, according to CIC. As of December 31, 2021, there were approximately 388.3 million smart devices powered by Tuya. We are also attracting an increasing number of Industry SaaS customers. We have established a large and active community of over 510,000 registered IoT device and software developers as of December 31, 2021. Smart devices powered by Tuya are currently available in approximately 120,000 stores all over the world.

Our offerings enable customers across a broad range of industry verticals, such as smart home, smart business, healthcare, education, agriculture, outdoors and sport, and entertainment. Our platform is cloud-agnostic, allowing customers to simultaneously work with multiple public cloud solutions, such as Amazon Web Services, Microsoft Azure and Tencent Cloud, as well as their private cloud infrastructures, with the flexibility to switch among them if needed. Our platform also integrates mainstream third-party technologies, such as Amazon Alexa, Google Assistant and Samsung SmartThings, to make smart devices more intelligent.

Our platform benefits from network effects driven by our ecosystem of developers, businesses, partners and end users. End users of smart devices demand a single interface to interact with various types of devices from different brands–an experience similar to using different apps on one smartphone. Our platform provides an open architecture to connect any device from any brand, while enabling users to manage all devices across brands through a single portal. As a result, we believe that as our platform continues to grow, more brands and OEMs want to join our platform to integrate their devices onto the single user interface through which devices from other brands are connected. These self-reinforcing network effects further increase our brand awareness and generate word-of-mouth referrals, helping us build an extensive, vibrant and increasingly interconnected IoT ecosystem.

We help our customers succeed and benefit from their long-term growth through our consumption-based revenue model as we deploy IoT PaaS on more smart devices developed by our customers. We had 311 premium IoT PaaS customers, defined as IoT PaaS customers who individually contributed more than US$100,000 of revenues during the immediately preceding 12-month periods, as of December 31, 2021. In the 12 months ended December 31, 2021, our premium IoT PaaS customers contributed approximately 88.6% of our revenues generated from IoT PaaS. Our dollar-based net expansion rate of IoT PaaS was 153% for the trailing 12-month period ended December 31, 2021, indicating strong growth within our existing customer base.

We also provide Industry SaaS to help businesses drive efficiency, cost saving and productivity across verticals, from smart commercial lighting to smart hotel and community. The deployment of our Industry SaaS solutions also enables us to reach and build relationships with a large number of brands, hardware companies and system integrators, which reinforces our network effect and synergies. We have also gained significant traction of Industry SaaS since its launch in late 2019, demonstrated by the fact that over 85% of businesses that became our smart hotel SaaS customers in 2020 renewed their contracts with us in 2021.

Our business has scaled rapidly in recent years. In 2021, we achieved deployment of IoT PaaS of 184.0 million, representing an increase of 57.9% from 116.5 million in 2020. In 2021, our revenues were US$302.1 million, representing an increase of approximately 67.9% from 2020. In 2020, our revenues grew to US$179.9 million, representing an increase of 70.0% from 2019. We generated net losses of US$70.5 million, US$66.9 million, and US$175.4 million in 2019, 2020 and 2021, respectively. In 2019, 2020 and 2021, our non-GAAP adjusted loss for the year was US$65.3 million, US$57.5 million, and US$109.3 million, respectively.

Challenges in the IoT Era and the Tuya Solution – An IoT Cloud Development Platform

For brands and OEMs, building software capabilities from scratch is both costly and time-consuming, causing many of their IoT ventures to be unsuccessful. While very few leading brands have built their own IoT solutions, these solutions often are only limited to their own products, or products of their selected business partners, and the vast majority of brands and OEMs globally simply do not have the capital and technology expertise necessary to develop and deploy software across millions of devices. Brands, OEMs and developers face a number of challenges, such as lack of development talent and capabilities, high cost of developing IoT ventures, long development cycles, lack of standardized, easy-to-use software infrastructure and tools for developers, and the complexity of providing a unified user experience.

Tuya was founded to solve exactly these challenges. We offer what we call an "IoT cloud development platform"—a platform that is open to all types of brands, OEMs, and developers from across the world where they can access a common infrastructure and all the ready-to-use software, development tools and services needed to efficiently, cost-effectively, and easily develop and manage smart devices. According to CIC, we offered the world's first IoT cloud development platform, giving us significant first-mover advantages in attracting and building long-term relationships with brands and OEMs globally.

Our IoT cloud development platform is one-stop and cloud-agnostic and allows our brands and OEMs to digitalize their businesses and transform the experience of their end users across a diverse range of use cases. Through our platform we have established an ecosystem of brands, OEMs, developers, partners and end users.

The foundation of our solution is Tuya IoT Cloud infrastructure, our unified underlying cloud infrastructure that provides a suite of infrastructure capabilities and developer tools.

Based upon Tuya IoT Cloud infrastructure, we offer the following major products and services:

- **IoT PaaS.** IoT PaaS provides brands and OEMs with a common software infrastructure and ready-to-use software and development tools that they need to quickly, easily and cost-effectively develop, manage and upgrade smart devices. IoT PaaS combines *cloud-based connectivity and basic IoT services, edge capabilities, app development and device optimization solutions*, which we believe are the most fundamental elements of enabling a product with IoT. Our IoT PaaS can be deployed on public or private cloud infrastructures such as Amazon Web Services, Microsoft Azure and Tencent Cloud. Our IoT PaaS transforms traditional products smoothly into IoT-enabled products with computing, storage and networking capabilities on the "edge", laying the foundation for a low code or no code development environment. We also provide a suite of developer tools and cloud-based services for customers to personalize or develop IoT applications that connect to our IoT cloud development platform and manage their smart devices for a variety of use cases.

- **Industry SaaS.** We offer Industry SaaS, vertical-focused software solutions for different industry verticals. Businesses, such as hotel operators or property managers, leverage our SaaS solutions to intelligently manage their operations based on connected smart devices, thereby improving operating efficiency and optimizing costs. Our SaaS offerings are fully integrated with our IoT cloud infrastructure, device management apps and user apps, for customers to use in a plug-and-play manner.

- **Cloud-based value-added services and others.** We have started to roll out a variety of services both to business customers and directly to the end users of Tuya-powered smart devices. We offer AI-powered virtual assistants to business customers. We also offer a variety of cloud-based services directly to end users including push messaging and content services.

OUR PRODUCTS AND SERVICES

We offer our products and services to all key IoT stakeholders. We set out to offer ***IoT PaaS*** to customers developing smart devices, including brands and their contracted OEMs. Over time, we have extended our offerings to those who use smart devices. We offer ***Industry SaaS*** to businesses in selected verticals and cloud-based ***value-added services*** to end users.

For Business Customers Developing Smart Devices

IoT PaaS

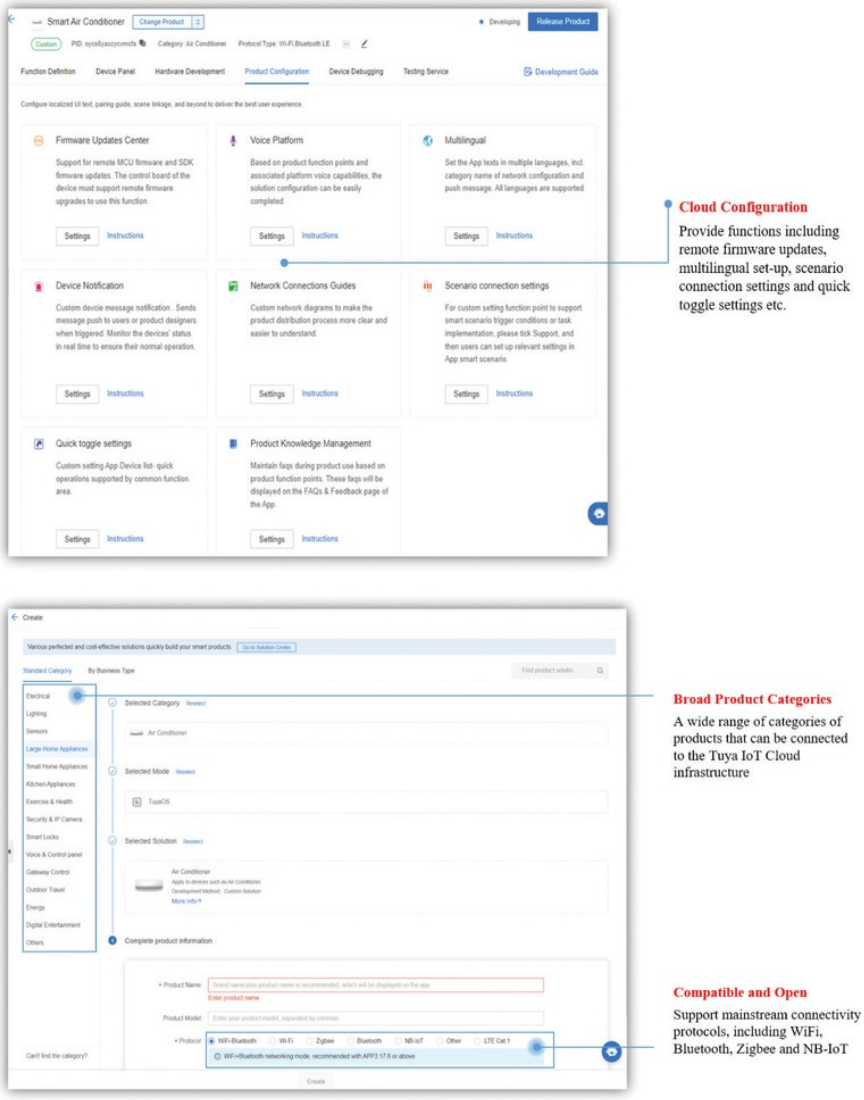
Our IoT PaaS is an integrated, all-in-one product for brands and OEMs to build and manage smart devices.

Our IoT PaaS combines cloud-based connectivity and basic IoT services, edge capabilities, app development, and device optimization solutions which we believe are the most fundamental elements of IoT capabilities. Customers can also leverage our developer toolkits, including SDKs and open APIs, to customize for desired use cases and functionalities.

- **Cloud-based connectivity and basic IoT services.** Our IoT cloud development platform assigns a unique virtual ID to each device powered by Tuya and pairs it with a "digital twin." A digital twin enables real-time, closed-loop exchanges of data between the cloud and the physical smart device throughout its lifecycle. As the status of the device changes, the digital twin synchronizes with it and "closes the loop" by sending data back to the device to enable different functions.

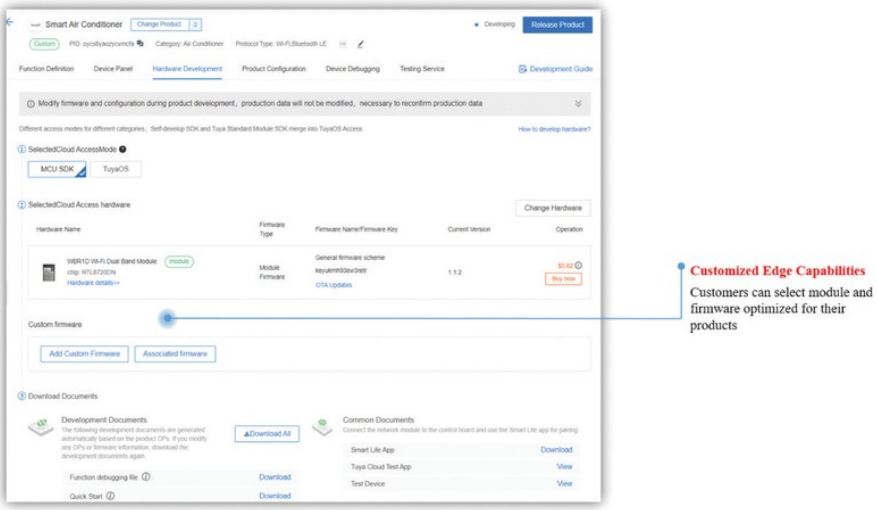
Digital twin and the cloud-based connectivity it enables offer many features hard to imagine in the pre-IoT era, such as using a smartphone to control multiple devices remotely and predicting failure based on patterns learned from vast amounts of IoT data. It also brings convenience and safety to end users. For example, when a sensor connected to the cloud detects kids coming home, it sends a text message to the parents asking them to unlock the door remotely; when smoke is detected while nobody is at home, it automatically turns off the gas and sends alerts. End users also benefit from basic IoT services such as automatic device scene switches based on real-time weather data stored on the cloud. Digital twin also makes troubleshooting easier and less costly by providing developers with a virtual test environment to troubleshoot problems without making any changes to the physical device.

Our IoT PaaS offers developers, many of whom working for brands and OEMs, an easy-to-navigate portal through which they can access a variety of software and development tools, as illustrated in the screenshots below.



- **IoT edge capabilities.** To become "smart," a device must have key capabilities such as connectivity, storage and data processing, which we call "edge" capabilities, embedded in modules installed on the device. Our IoT PaaS offers a library of edge capabilities for customers to choose from, as well as visualized, simple tools and dashboards for them to quickly find what they need. Our IoT PaaS currently supports all mainstream wireless technologies, including Wi-Fi, Bluetooth, ZigBee, and other IoT edge capabilities.

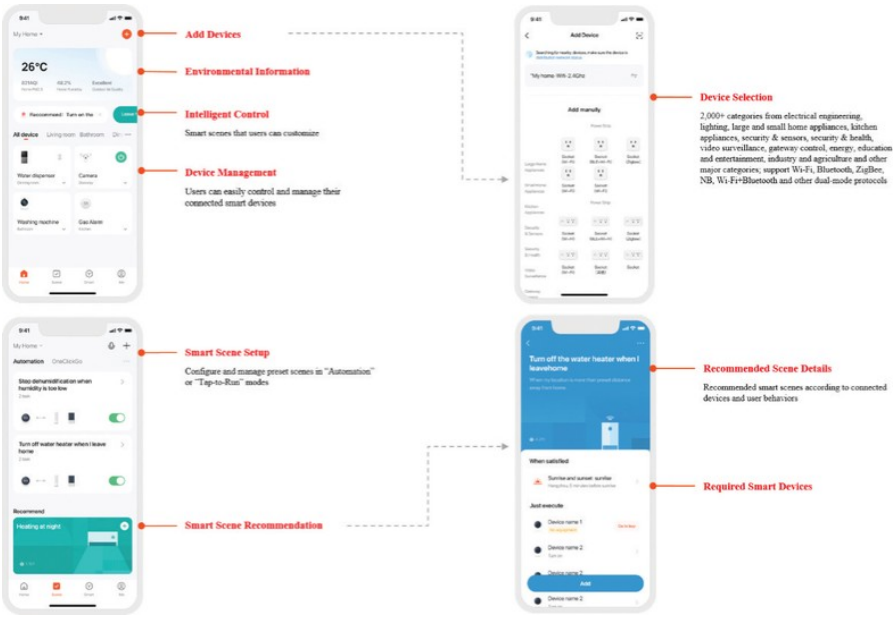
The below screenshot illustrates the interface through which developers can leverage IoT PaaS to embed edge capabilities.



The edge capabilities we offer are all pre-coded and ready-to-use, giving customers shorter time-to-market than writing the codes from scratch.

- **App development.** An easy-to-use app is key to a superior IoT experience. We offer "white label" apps with minimal modification required to give customers the shortest time-to-market. This "one-app-for-all" approach enables end users to manage multiple devices, even those from different brands and categories, using one app only. Our customers may choose to engage us to design tailor-made apps or, in many more cases, customize the apps themselves or through third-party developers with simple-to-use development tools that we offer.

The below screenshot showcases our "one-app-for-all" approach that enables end users to manage various functions and different categories of devices using a single app, as well as our "Smart Scene" functions, which allow users to configure and manage present scenes and recommend smart scenes according to connected devices and user behaviors.



- **Device optimization solutions.** Even equipped with the edge capabilities, sometimes a device may not function well if the hardware is incompatible with the software. We bridge this gap for customers by helping them optimize the design, manufacturing and configuration of Tuya-powered devices to ensure that the hardware and software integrate to deliver the desired use cases and functionality. We also provide developers with a suite of analytics and debugging tools to help them independently identify root causes and troubleshoot problems.

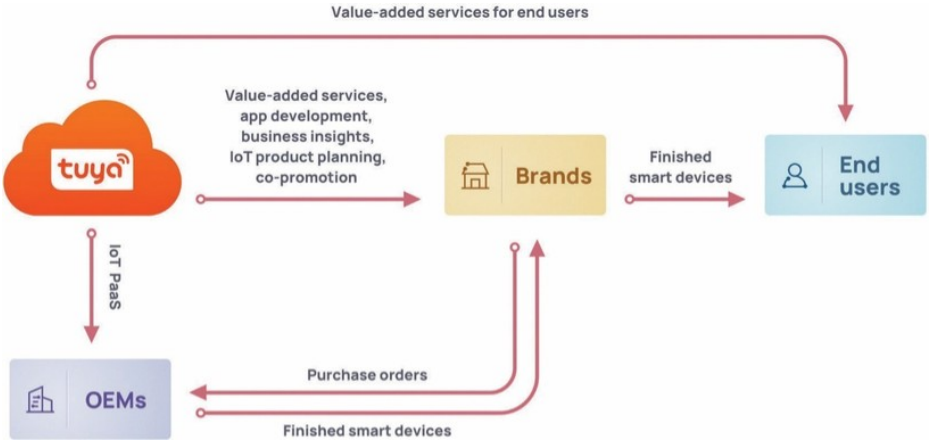
Our IoT PaaS also includes the following ancillary cloud-based services:

- **Tuya Mall.** It refers to the services that we offer to customers to help them build their own online marketplace to sell and distribute smart devices.

- **AI-powered virtual assistants.** We enable our customers to add voice control powered by Amazon's Alexa, Google Assistant and Samsung SmartThings to their devices.

- **Others.** In addition, we provide approximately 50 other ancillary value-added services, such as app function expansion service, device testing, "Work with Alexa" certification, "ZigBee Alliance" certification, and joint research and development of innovative IoT applications, among other things. We also enable our customers to process and leverage device-level and app-level information to generate business insights to help improve their businesses.

Our IoT PaaS offers a cloud-agnostic development environment, allowing customers to simultaneously work with multiple public or private cloud infrastructure, with the flexibility to switch among them if needed. This flexibility is valued by customers because it enables them to scale up their product portfolios as well as to cater to the broadest user bases across global markets, as different brands may have different preferences over cloud infrastructures, from commercial or compliance perspectives. According to CIC, we are the world's first IoT cloud development platform at scale that is cloud-agnostic. The following flow chart illustrates how we connect and empower key stakeholders surrounding our IoT PaaS, i.e. brands (including retailers offering private-label smart devices) and their contracted OEMs, as well as end users.



Smart Device Distribution

We believe the efficient distribution of Tuya-powered smart devices to target audiences benefits our long term competitive edge and sustainability. To this end, we strategically offer select customers, mainly brands and system integrators, who prefer not to deal with multiple OEMs option to purchase directly from us finished smart devices deployed with IoT PaaS sourced from qualified OEMs. These customers typically place purchase orders directly with us by specifying the type of smart devices. We then source devices for these customers from qualified OEMs selected based on the type of products, hardware specifications and other metrics. We earn the difference between the prices at which the products are sourced and sold.

We also provide customers with the access to Tuya Expo, a dedicated business-to- business (B2B) platform connecting brands globally with an extensive network of OEMs. Tuya Expo is currently offered for free.

For Business Customers Using Smart Devices

Industry SaaS

We offer Industry SaaS, vertical-focused software solutions that enable businesses to deploy, connect, and manage large numbers and different types of smart devices. Just like how billions of people use apps to enjoy mobile technology, we design Industry SaaS as plug-and-play everyday tools for people to interact with and harness the power of IoT. Industry SaaS makes life easier, healthier and more enjoyable, and drives efficiency, cost saving and productivity for businesses of all sizes across industries.

Our Industry SaaS is built to be brand-agnostic and is compatible with Tuya-powered devices across brands and categories. We believe this is the key reason our customers choose us over other IoT SaaS providers, especially those that only support certain brands exclusively, because our brand-agnostic Industry SaaS enables customers to manage their diverse business needs and smart device products across different brands and categories. Industry SaaS customers have the flexibility in sourcing smart devices by themselves, from OEMs recommended by us or via other channels based on their own preferences.

We offer Industry SaaS to select verticals with the potential of monetizing our IoT capabilities. We are also able to deliver the infrastructure and core capabilities of Industry SaaS as a vertical-agnostic solution that they can use to create industry-specific applications and use cases.

Set out below are a few examples of our Industry SaaS and the use cases they enable:

- **Smart commercial lighting SaaS solution** is a cloud-based one-stop solution specifically designed for the commercial lighting use cases to deliver convenience, better experience and energy saving. It includes a set of functions ranging from device control to ergonomic lighting and green building management, as well as maintenance services and onsite trouble-shooting.
    - ***Smart commercial lighting*** – gives property owners or managers total control of all their devices and all the data generated via an easy-to-use dashboard and data interface. Through a map of the lighting layout, property owners or managers can view and monitor all devices and maintenance needs through built-in reporting and analytics. This will, in turn, allow them to implement strategies to reduce energy and maintenance costs.
    - ***Human centric lighting*** – brings the natural changes of light intensity and color temperature indoors by using artificial light to imitate natural light, which provides optimized work and living environments.
- **Smart community SaaS solution** digitalizes, streamlines and automates every aspect of residential housing and residential community management via IoT. From home automation to elderly care and neighborhood safety, it provides real estate developers and property management companies a unified platform to connect and manage large numbers of smart devices in different indoor and outdoor locations across the community.
    - Smart Community SaaS solution provides tools and applications to not only facilitate property maintenance but also make everyday life on the property easier and more convenient for all residents.
    - By connecting to a large number of smart devices deployed across the community, property management companies can generate actionable insights from a wide range of utility and property data that they can use to make more informed business decision.
- **Smart hotel/apartment SaaS solution** offers a management solution for hotels and resorts, designed to not only provide convenience for hotel guests, but also drive automation, efficiency and responsiveness for the hospitality industry. For apartments, we also offer a toolkit for landlords and rental apartment operators to connect smart door locks, sockets and other smart devices to increase the value of their properties and make them easier to manage. It is compatible with all mainstream property management systems, or PMS, as well as customers' own systems purpose-built for a wide range of use cases, including campuses, offices and other commercial facilities.
    - Our Smart Hotel/Apartment SaaS solution allows the management to monitor different aspects of hotel services, such as housekeeping, guest traffic control, property surveillance and maintenance, from a single control point.

- The hotel experience – guests staying at a hotel utilizing our smart hotel app can personalize their surroundings without having to adjust every individual device. Hotels are also able to save on utilities bills by taking advantage of human activity detection-based lighting and air conditioning in public areas and guest rooms.

- The resident experience – residents can monitor energy and utilities usage, create simple one-click actions to streamline routines or create access credentials for all guests. Apartment managers can monitor apartment maintenance more efficiently through our smart apartment software.

We primarily market our Industry SaaS to system integrators. We also sell directly to individual industry operators, such as hotel or property managers. We mainly target large, established organizations with leading positions in their respective verticals and geographies, so that we can leverage their industry expertise and existing customer bases to quickly gain market shares and build brand awareness.

For End Users Using Smart Devices

We want to make Tuya part of people's everyday life and make their IoT experience seamless. Since inception, we have allowed end users to connect to our IoT cloud platform to access a variety of basic cloud-based services, such as receiving app updates, for free. We also give end users the option to pay a fee to access a curated suite of cloud-based value-added services:

- **Push messaging** – sends users SMS text messages when a specific event (e.g., fire alarm going off) happens;

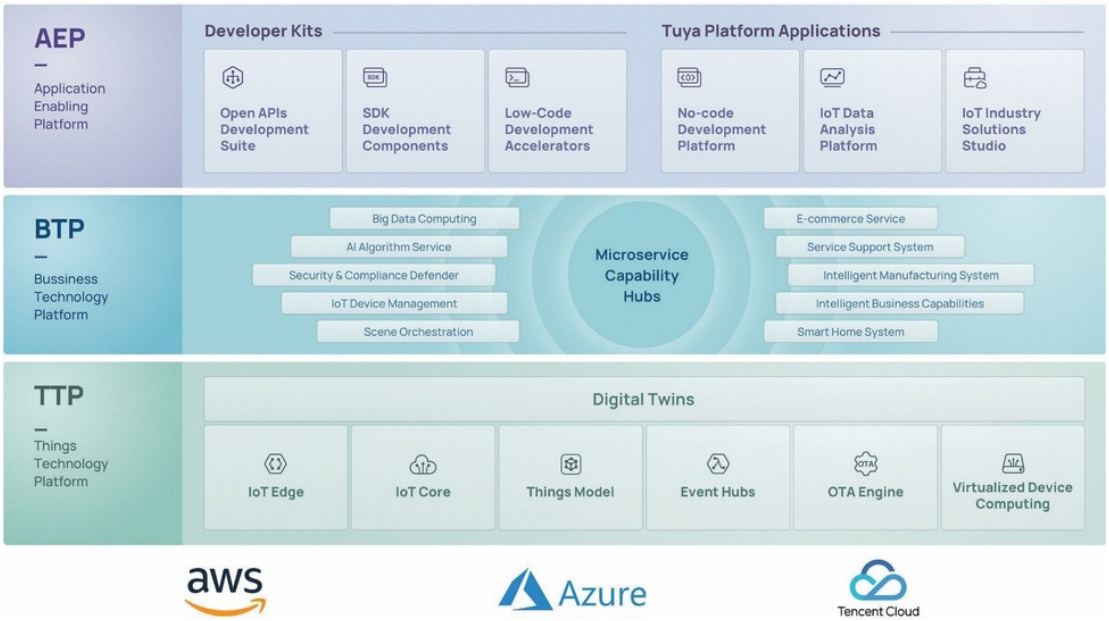
- **Content** – a library of digital content that enhances users' IoT experience, such as music, podcasts and even a bedtime story that users can ask their Tuya-powered virtual assistant to tell for their kids;

- **Others** – various other cloud-based value-added services, such as stream media.

As we gain more insights about customer demands through their feedback, we will continue to roll out additional value-added services for end users, aiming to provide an engaging and continuously improved customer experience.

OUR TECHNOLOGIES

Our IoT platform and product offerings are supported by Tuya IoT Cloud infrastructure, our unified underlying infrastructure, as illustrated below.



Our IoT technologies consists mainly of Things Technology Platform (TTP) and Application Enabling Platform (AEP). TTP and AEP together serve as the bedrock of our IoT cloud development platform and product offerings. We also have Business Technology Platform (BTP), which is the competency center that provides the technology foundation to the upper layer of our Tuya IoT Cloud infrastructure. With these technologies, developers can quickly and cost-efficiently develop, manage, and upgrade smart devices and customize IoT capabilities for their specific user cases. We believe that these technological features enable us to build a growing and dynamic network of developers and partners, and drive our long-term revenue growth.

- **Things Technology Platform (TTP)** is the technology that enables real-time, closed-loop data exchanges between the cloud and the physical smart devices throughout their life cycle, thus improving the efficiency of IoT deployment. By integrating all types of data points and functions from hundreds of thousands of consumer smart devices, TTP generates a consistent and standardized "Things Model," which allows developers to further customize it based on specific use cases. Our platform provides customers with a suite of solutions so they can have all the necessary features in their product development without switching to a different platform. Furthermore, TTP connects, authorizes, authenticates and manages IoT devices, enabling stable and precise connections and interactions across various devices with different functions, attributes, models and manufacturers.

  Our TTP consists of the following components:

  - IoT Edge features edge computing capabilities that bring computation to the edge. IoT devices can spend less time communicating with the cloud, react more quickly to local changes and operate more securely and reliably;

- IoT Core is the core ability to connect, authorize, authenticate and manage digital twins devices;
- Things Model creates virtual representations of physical smart devices that enable analysis of data and monitoring of systems to prevent downtime, test new devices by using simulations, and troubleshoot problems even before they occur;
- Event Hubs provides a unified streaming platform with time retention buffer, decoupling event producers from event consumers;
- Over-the-air Engine, or OTA Engine, provides unified OTA strategy and data analysis, predicts when devices need upgrades, reduces device OTA risks, and optimizes device usage activities;
- Virtualized Device Computing enhances a smart device's hardware capabilities from the cloud platform by managing device access and scenes control through the edge of the network.

- **Application Enabling Platform (AEP)** provides brands, OEMs and developers with a one-stop shop of IoT cloud capabilities that they can use to add, customize, or integrate functionality in a development environment that is "low-code" or even "no-code", meaning that those IoT cloud capabilities are ready-to-use by developers so that they do not have to write the codes from scratch. More specifically, AEP enables us to modularize the underlying functionalities and capabilities of its TTP, and visualize such functionalities and capabilities as icons and buttons on the development platform's operating interface. This allows customers to easily understand, select, drag and drop the desired functionalities for their smart devices in the development process even with little or no programming expertise. Leveraging our AEP, customers may reduce the time for developing devices or functionalities from months to days. In addition, our AEP is also equipped with device testing tools for manufacturing purposes, allowing customers to shorten the production-to-delivery cycle and achieve mass production for the smart devices within weeks.

  AEP includes Tuya Platform Applications and Developer Kits that allows us to deliver IoT PaaS, Industry SaaS and other value-added services.

  - *Developer Kits* allow developers to integrate tailored-made IoT capabilities through a variety of APIs, SDKs and low-code development accelerators that allow developers to add, customize, or integrate systems and functionality based on specific requirements and needs.
  - *Tuya Platform Applications* combine no-code development platform, IoT data analysis platform and IoT industry solution studio to provide full platform- based business service capabilities.

- **Business Technology Platform (BTP)** is the competency center that provides the technology foundation to the upper layer of our Tuya IoT Cloud infrastructure in the form of modular micro-services. It brings together a suite of service modules, such as big data computing, AI algorithm service and IoT device management, that work together to optimize customer experience.

We have deployed six data centers hosted worldwide, including in China, the United States, Europe and India.

RESEARCH & DEVELOPMENT

Our leadership is built by our creative and dedicated teams who are passionate about IoT. As of December 31, 2021, we had 2,561 research and development employees, representing approximately 73.8% of total employees. Our research and development team primarily consists of technology and platform development engineers responsible for (i) developing and iterating proprietary IoT technologies (e.g. TTP and AEP) and implementing enhancements and upgrades of our IoT cloud development platform; (ii) developing and upgrading our Industry SaaS software solutions; and (iii) optimizing our internal operational systems and technologies. A majority of our research and development team members have approximately 6.1 years of experience across a significant number of different subject areas such as IoT, industry design, cloud computing, AI and machine learning.

Our IoT cloud development platform and proprietary cutting-edge and innovative IoT technologies have been developed in-house. We have invested substantially in research and development and we expect to continue to devote significant resources to research and development activities and incur substantial amount of research and development expenses to enhance our competitive edge. In 2019, 2020 and 2021, we incurred US$52.0 million, US$77.4 million and US$174.3 million of research and development expenses, respectively, representing 49.2%, 43.0% and 57.7% of our total revenues, respectively for the same years. These investments have continued to result in the launch of innovative products that have helped us attract new customers and sell more to our existing customers.

BRANDS WE SERVE

Our growth strategies are tailored around the brands we serve and their contracted OEMs. For leading brands and their OEMs in target categories and those with large demands in our products, we are focused on providing bespoke support and services by, for example, offering free trials of product enhancements and new features and functionality. In 2021, our IoT PaaS empowered a total of approximately 4,100 brands to develop smart devices.

We are proud to serve brands across the globe. The following is a representative sampling of the brands we serve:

Calex	Dorel Juvenile	Flipkart	Goodyear	Haier
Hampton	Heathco	JHC	Henkel	Lenovo
Lloyd's	Lock&Lock	Miniso	Monster	Orange
Panasonic	Philips	Realme	Schneider Electric	Telkcom Indonesia
Sodimac	Softbank	Westinghouse	Wipro	Wonly Group

Substantially all of the brands we serve relate to our IoT PaaS business. We typically do not enter into agreements in relation to IoT PaaS business directly with the brands and instead enter into agreements with their contracted OEMs. In these circumstances, we consider such OEMs to be our customers. In limited circumstances, we also enter into agreements directly with brands in relation to certain value-added services, in which case we also consider such brands to be our customers.

CASE STUDIES

The following case studies illustrate how our customers and brands we serve use and benefit from our products and services. We believe these case studies demonstrate the wide adoption of our products and services across geographies, verticals, and customer sizes.

Goodyear

Goodyear is one of the world's largest tire manufacturing companies with operations around the world. Since the 20th century, Goodyear has begun to diversify its businesses. Miralbueno Products S.L., a Spanish company licensed by Goodyear to develop and sell mechanical products, has expanded its business and started to explore opportunities in categories including smart outdoor products and indoor air quality products.

After conducting a comprehensive evaluation of our products and services, Miralbueno- Goodyear found that we could not only able to empower customers to rapidly develop smart devices but also connect them with OEMs and provide them with one-stop solutions. In a very short period of time, we recommended over ten OEMs to Miralbueno-Goodyear and helped it successfully upgrade its products to smart products, including the launch of the Goodyear scooters. Moreover, we helped Miralbueno-Goodyear rapidly develop and successfully launch various smart devices including smart air purifiers and smart air quality testing devices.

With our rapid product development capabilities, flexible app and interface design, multilingual support and brand-agnostic platform, we quickly and effectively empowered the Goodyear brand and enhanced Miralbueno's strengths in marketing and sales channels to sell its products in different regions including Europe and South America. We intend to continue to partner with Miralbueno-Goodyear to further expand their product offerings, enrich their product ecosystem and improve their ability to better serve the market.

A leading global supermarket chain

Our customer is an international discount supermarket chain that operates over 11,000 stores across Europe and the United States. As the concept of smart living is being embraced by more and more retail chains, our customer wanted to develop its own collection of smart products.

After evaluating multiple other cloud platforms, our customer decided to partner with us in October 2019. Utilizing our brand-agnostic platform and easy-to-use developer toolkits, this customer quickly launched its own smart product line and immediately turned out well with a large collection of more than 40 SKUs, such as LED lamps, motion sensors, and home appliances. These products are compatible with multiple protocols such as ZigBee, Wi-Fi and Bluetooth. Since November 2020, these products are sold in more than 8,000 stores across 19 countries in Europe under our customer's own brand, and we have deployed more than 7 million IoT PaaS for this customer covering over 70 SKUs.

In 2021, our customer leveraged Tuya's technologies to expand its offerings to include more categories and use cases. These include, for example, cleaning appliances such as robotic cleaner and lawn mower; and power and energy products such as power tool accumulator & charger, wireless switches, and thermostatic radiator valves. Our customer is looking to further collaborate with Tuya to develop more small home and kitchen appliances.

We believe that with our strong customer support, rapid development cycle and comprehensive ecosystem, we can help our customer develop more series of smart products and enable more end users to experience the concept of smart living made possible by our IoT cloud platform.

MOMAX

MOMAX is a renowned AIoT and consumer electronics brand, headquartered in Hong Kong, offering a wide range of consumer electronics products sold in the global market.

Through Tuya's IoT cloud development platform, MOMAX has successfully transformed itself into a smart home brand. It has recently launched some best-selling smart devices under the brand name "MOMAX SMART" across an array of categories, such as air purifiers, vacuum robots, and LED desk lamps. By using Tuya's technology, MOMAX has enabled its users to seamlessly connect smart devices across different categories. This has significantly differentiated MOMAX's products from competing products and allowed MOMAX to attract more partners and sales channels and achieve significant revenue growth.

By leveraging Tuya's IoT platform, MOMAX has also launched a new smart home brand, "Smart D" which offers smart devices featuring popular Disney, Pixar and Marvel characters. "Smart D" products are currently available across various well-known online and offline retailers in Hong Kong. MOMAX also leveraged Tuya's technology and supply chain capabilities to develop smart air purifiers with a program, which deployed across multiple industries successfully, including renowned restaurants and hotels, etc in Hong Kong to combat COVID-19 pandemic situation.

MOMAX is innovative about the potential of the smart home industry. Going forward, MOMAX is looking to expand its collaboration with Tuya to develop a wider range of smart devices, enhance partnerships with sales channels, and deliver a better IoT experience across smart home, smart mobility, and smart environment for end users in Hong Kong.

China Overseas Properties

China Overseas Properties is a PRC state-owned enterprise engaging in real estate development, city services and business innovation. China Overseas Properties considers technology as a strategic priority with a wholly-owned subsidiary specializing in IoT.

China Overseas Properties was seeking partners to help it build its own smart real estate platform. After a robust evaluation process, China Overseas Properties eventually decided to cooperate with us as it highly appreciated our deep IoT expertise, full-stack technology capabilities, extensive product offerings, and customer-oriented strategies.

China Overseas Properties' partnership with Tuya has not only enabled it to develop comprehensive customized smart home solutions, but also connected it with hardware partners that helped it create a range of smart home systems and applications under its own brand name. Through its partnership with Tuya, China Overseas Properties has been able to upgrade its offerings, reach a broader customer audience, optimize its procurement process to save costs, and enhance its analytics capabilities.

Bilinwei

Bilinwei is a leading company in China's lighting industry, specializing in the development of smart controllers and lighting systems for factories and warehouses.

After evaluating multiple IoT cloud platforms, Bilinwei chose Tuya to help it empower its customers with IoT. The partnership with Tuya has not only allowed Bilinwei to accelerate time-to-market but also significantly reduced its research and development costs by addressing the most common customization needs through a single platform powered by Tuya. As the partnership continues, Bilinwei and Tuya have jointly launched a number of landmark smart industrial lighting projects. For example, for a renovation project of a maintenance hangar at an international airport, Tuya's technologies enabled Bilinwei to develop a smart control system with electricity consumption reduced by approximately 55% and shorten the renovation period from the typical 14 days to 4.5 days. In another project, by deploying Tuya's smart commercial lighting solutions, Bilinwei helped one of its customers successfully reduce energy consumption by approximately 60% and reduce carbon emissions by approximately 270 tons per year.

We look forward to cooperating further with Bilinwei to help it grow its smart industrial lighting offerings, capitalizing on the trend towards energy conservation and carbon neutrality.

CUSTOMERS

We had approximately 8,400 customers in 2021, primarily including brands, OEMs, industry operators and system integrators. For the same period, our IoT PaaS empowered approximately 4,100 brands to develop their smart devices, including leading brands such as Calex, Philips and Schneider Electric, and had an increasing number of Industry SaaS customers. As we have cultivated a large and diversified customer base across different industry verticals, we believe that none of our customers is material to our total revenues. We provide online customer support services and tools for our customers to submit customer complaints and service requests anytime and anywhere.

We use dollar-based net expansion rate (as defined in the section of "Item 5.A. Operating Results—Dollar-based Net Expansion Rate for IoT PaaS") for IoT PaaS as a useful indicator of our customers' loyalty and tendency to expand their usage of our platform over time. For the trailing 12-month period ended December 31, 2019, March 31, 2020, June 30, 2020, September 30, 2020, December 31, 2020, March 31, 2021, June 30, 2021, September 30, 2021, and December 31, 2021, the dollar-based net expansion rates for IoT PaaS were 188%, 173%, 160%, 179%, 181%, 210%, 211%, 179% and 153%, respectively.

QUALITY CONTROL

We are committed to providing customers with our products and services of consistently high quality. We emphasize quality control in all aspects of our business including for example design, research, production, sales and after-sales services. We strictly control the quality of our business and operations. In order to monitor the quality and ensure that our products and services meet all our internal benchmarks and specifications, we have implemented various quality-control checks into our business process. In addition, we provide after-sales services and support to our customers.

We have devoted significant resources to the quality control of our products and services. Our quality control is a cross-departmental responsibility shared by multiple teams across business functions including supply chain management, quality assurance, safety and compliance, and after-sales and customer service. In particular, these teams are responsible for establishing quality control standards, procedures for inspection of our raw materials and products and review standards of our suppliers. They are also responsible for handling customer complaints and compliance of applicable laws and international and national standards.

SALES, MARKETING AND BRANDING

We generate sales primarily through our direct marketing efforts targeting brands and OEMs, with a focus on attracting new customers as well as expanding usage within our existing customer base. We offer a membership program to our customers that gives them the option to pay a membership fee primarily in exchange for IoT PaaS discounts based on a tiered membership status in accordance with their expected deployment volume. The membership program allows us to foster long-term relationship with our customers. We also generate customer leads indirectly through offline retail channels and e-commerce platforms. We currently operate dedicated regional sales forces covering a number of our key overseas markets, such as the U.S., India, Japan and Germany. We also market our products and services through media, word-of-mouth, advertising, and promotion to further enhance awareness of our brand as well as to increase our brand exposure across various customer bases.

As we expand our footprint globally, we have invested substantially in developing localized marketing strategies and employing sales and support staff. In particular, we focus on educating customers about the “Powered by Tuya” smart ecosystem. We raise customers’ awareness that any smart device labeled with the “Powered by Tuya” tag can interact with each other regardless of brands and product categories.

We utilize a multitude of sales and marketing channels, including:

- online marketing channels such as search engine optimization, private domain operations and the online developer platform on our website;
- offline channels such as word-of-mouth referrals from brands owners, OEMs, retailers and other industry participants;
- brand marketing through industry conferences and events, including Mobile World Congress, International Consumer Electronics Show, and Hong Kong Electronics Fair where we demonstrate how we empower developers to push the boundary of IoT; and
- developer outreach via code sharing platforms and Q&A websites such as GitHub and Zhihu.

INTELLECTUAL PROPERTY

We rely on a combination of patent, copyright, trade secret and trademark laws as well as contractual restrictions such as confidentiality agreements, licenses and intellectual property assignment agreements. We also maintain a policy requiring our employees, contractors, consultants and other third parties to enter into confidentiality and proprietary rights agreements to control access to our proprietary information. As of April 12, 2022, we had registered 296 patents, 583 trademarks, 127 copyrights, and 118 domain names in China and overseas. We have registered "Tuya" and "Powered by Tuya" as trademarks.

Despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy or otherwise obtain and use our technology. Monitoring unauthorized use of our technology is difficult and costly, and we cannot be certain that the steps we have taken will prevent misappropriation of our technology. From time to time, we may have to resort to litigation to enforce our intellectual property rights, which could result in substantial costs and diversion of our resources. In addition, third parties may initiate lawsuits against us alleging infringement of their proprietary rights or declaring their non-infringement of our intellectual property rights. In the event of a successful claim of infringement and our failure or inability to develop non-infringing technology or license the infringed or similar technology on a timely basis, our business could be harmed. Even if we are able to license the infringed or similar technology, license fees could be substantial and may adversely affect our results of operations.

DATA SECURITY AND PRIVACY

When providing our products and services, we may have access to certain data of our customers and the end users, primarily certain machine-generated data produced by the smart devices powered by us. Such data consists primarily of the following types of device- and app-level information: (1) data collected when a user registers in the mobile app that connects and controls smart devices powered by Tuya (the "App"), such as basic account information (e.g., email address used to create an account); (2) data collected through the App, such as App usage data and log information, mobile phone information (i.e. types and models of the mobile phones on which the App is installed), and feedback that users submit via the App; and (3) data collected from smart devices, such as basic device data (e.g. on or off status and color) and data reported by the devices (e.g. humidity) of which the primary use is for the device to function properly, as proactively consented to by the users. While we have right to access and process such data to the extent proactively consented to by our customers or the users, we do not have control over most data, and the users retain the ownership of the underlying personal information.

We have designed strict data protection policies to ensure that the collection, use, storage, transmission and dissemination of such data are in compliance with applicable laws and with prevalent industry practice. Specifically, our policies cover three main areas: data security, cloud service security, and access control management.

- Data Security Policies: we have published the Information Security Management Manual based on industry-recognized information security management framework. Our Policy of Handling Individual Rights aims to address privacy-related requirements outlined by multiple data privacy laws and regulations about individual privacy requests, the internal process, and responsible departments for responding to different types of data requests. Our Information Classification & Handling Policy has been developed to classify all information created, collected, processed and/or disseminated within the organization into different levels of sensitivity and criticality. Our Data Backup Policy requires mandatory electronic backup, so that data and application programs can be restored when an incident impacting the integrity of such data occurs. In addition, we have adopted the Tuya Incident and Data Breach Response Plan, which provides a well-defined, organized approach for handling any potential threat to servers and data, as well as taking appropriate action when the data breach concerns personal information.

- Cloud Service Security Policies: we have published the Management Process of Access to Information Systems and Surveillance of Use with the goal of strengthening the surveillance and control of access to our cloud information systems and to manage the security monitoring and log reviews within the infrastructure. Our Change Management Security Policy sets forth necessary processes to internally review and approve of potential changes before execution. Our Data Retention Policy aims to provide clear understandings of our roles and responsibilities for data retention and processing, and to regulate such retention, use and deletion of data collected and processed by us.

- Access Control Management Policies: we have designed Access Control Policies, which outline the categories of access to system platforms, application, machines and the alignment of personnel functionality accordingly, in an effort to achieve effective access control and to ensure information security integrity and confidentiality. We have also developed Management Process of Secure Areas to help us maintain the security of physical access to our facilities and offices by establishing effective perimeters and safeguard measures, which is an integral part of ensuring the integrity, security and confidentiality of data.

We have established an all-round information system in reference to data security requirements and best practices and intend to continually invest heavily in data security and privacy protection. Our information system applies multiple layers of safeguards, including internal and external firewalls, enterprise-standard web application firewalls, risk management platform, and runtime application self-protection, or RASP, a security technology that detects and blocks computer attacks using information from inside the running software. We encrypt data throughout its lifecycle to safeguard privacy and enhance data security. We implement a robust internal authentication and authorization system to ensure confidential and important data can only be accessed through computers for authorized use and only authorized staff can access those computers. We have clear and strict authorization and authentication procedures and policies in place. Our employees only have access to data which is directly relevant and necessary for their responsibilities and for limited purposes and are required to verify authorization upon every access attempt. We have also implemented robust internal rules and procedures, including security assessment in the design and implementation of R&D projects and code auditing, to ensure that the designed security requirements are met in our R&D activities and code quality and security. Furthermore, we have established an incident response team that comprises of a Chief Information Security Officer (CISO), a Data Protection Officer (DPO), and a Chief Privacy Officer (CPO) to provide a quick, effective and orderly response to servers and personal information related potential or actual incidents such as virus infections, hacker attempts and break-ins, improper disclosure of confidential information, system service interruptions, breach of personal information, and other events with serious information security implications.

We have completed information security, privacy and compliance certifications/validations with the consultation of various global agencies, and now serve as a reliable IoT platform with comprehensive certificates in Asia. We have obtained ISO 27001 Information Security Management System Certificate, ISO 27017 Certificate for Information Security of Cloud Services, ISO 27701 Certificate for Protection of Personally Identifiable Information and are fully committed to complying with GDPR and CCPA. We have also worked with top privacy compliance and cyber security firms, such as TrustArc, ioXt Alliance and Rapid7, for privacy management and penetration testing.

As of the date of this annual report, we have not received any claim from any third party against us on the ground of infringement of such party's right to data protection as provided by the PRC General Principles of Civil Law or any applicable laws and regulations in other jurisdictions, and we have not experienced any material data loss or breach incidents.

ENVIRONMENTAL, SOCIAL AND GOVERNANCE

We are committed to promoting corporate social responsibility and sustainable development and integrating it into all major aspects of our business operations. Corporate social responsibility is viewed as part of our core growth philosophy that will be pivotal to our ability to create sustainable value for our shareholders, partners, customers and employees by embracing diversity and public interests.

Our Board of Directors is responsible for formulating our corporate social responsibility objectives and provides guidance on practicing corporate social responsibility in our daily operations. One of our main ESG objectives is to reduce any negative impacts on the environment through our commitment to energy saving and sustainable development. In addition, we endeavor to support and have a lasting positive impact on the local community, through various initiatives, including corporate philanthropy, establishing community partnerships, and mobilizing our employees to participate in volunteer work. We have also been focused on embracing diversity within our organization and equal and respectful treatment of all of our employees in their hiring, training, wellness and professional and personal development.

Our Board of Directors has the collective and overall responsibility for establishing, adopting and reviewing the ESG vision, policy and target, and evaluating, determining and addressing our ESG-related risks. We have continued to improve the oversight by our Board of Directors of ESG matters through a series of measures, including, taking into account ESG matters in board room discussions and strategic planning, conducting and regularly refreshing a materiality assessment to identify and assess all material ESG issues, developing and regularly reviewing ESG policies, and regularly monitoring ESG performance against our goals.

Commitment to Sustainable Development through Products and Services

As a global company deeply committed to environment and social responsibility, we always strive to make society a better place with our IoT technologies and products. We target to achieve sustainability which constitutes a fundamental strategy for us as we expand and diversify our offerings. In particular, we endeavor to incorporate environmental and ESG- related considerations into our product development process and have been actively exploring ways to achieve environmental protection and realize carbon neutrality. Many of our offerings of key products and services, such as our energy-efficient algorithms that aim to decrease energy usage of smart devices as much as possible, help customers optimize their business processes, reduce costs and improve operational efficiency. For example, our garage motion-sensing smart lighting solutions can help save more than 75% in energy usage while optimizing lighting. In the agricultural setting, our smart plant lighting solution, compared with traditional planting solutions, allows software developers to build their own dynamic spectrum algorithms to shorten the growth cycle of different plants, substantially reducing energy and resources consumption while maximizing plant growth efficiency.

In the mid-term, we will continue to monitor our carbon emissions which we expect to mainly come from office premises, and continue to implement sustainable and environmental- friendly practices to reduct our carbon emissions. We also intend to leverage our IoT technologies and products to help customers further achieve energy savings while optimizing device functionalities, and explore new, innovative designs for smart device energy storage and usage. In the long-term, we intend to use our technological capabilities to enable greater sustainability across different industry verticals, enhance energy usage efficiency and optimize environmental and waste management through the implementation of various carbon neutral practices.

Embracing Diversity and Building a Healthy Workplace

We will continue to prioritize achieving diversity within our organization and equal and respectful treatment of all of our employees in their hiring, training, wellness and professional and personal development. In particular, we recognize and embrace the benefits of having a diverse board and sees increasing diversity at the board level, including gender diversity, as an essential element in maintaining our company's competitive advantage and enhancing our ability to attract, retain and motivate employees from the widest possible pool of available talent. We are committed to taking a proactive approach in recruiting female directors and aligning directors' diverse competencies and perspectives with the company's strategy, and we believe that our diversity efforts are well implemented as evidenced by the fact our board consists of four female directors out of the total nine directors. While maximizing equal career opportunity for everyone, we will also continue to promote work-life balance and create a happy culture in our workplace for all of our employees.

As we do not operate any production facilities, we are not subject to material health, work safety, social or environmental risks. To ensure compliance with applicable laws and regulations, our human resources department will, if necessary and after consultation with our legal advisors, adjust our human resources policies to accommodate material changes to relevant labor and safety laws and regulations. During 2020 and 2021 and up to the date of this annual report, we have not been subject to any fines or other penalties due to non-compliance in relation to health, workplace safety or environmental regulations, and have not had any accident, or claim for personal or property damage made by our employees which had materially and adversely affected our financial condition or business operations.

Supporting the Community

As a company with strong sense of and commitment to social responsibility, we have in recent years launched a series of non-profitable events and campaigns as part of our corporate social responsibility efforts.

- Amid the early stage of COVID-19 outbreak in February 2020, we donated medical supplies with a total value of RMB1.0 million to frontline doctors and hospitals, including nearly 600 Tuya-powered smart devices, 16,000 medical surgical masks and thousands of protective suits;
- Besides helping fight the COVID-19 pandemic, we have been actively involved in various other types of corporate philanthropy efforts. During October to December 2021, we held a number of charitable events to help the local people in need and support local economic development. In these events, we donated supplies with a total value of RMB2.0 million, including IoT smart devices, to poverty-stricken areas or villages in China such as Ganzi, Ya'an, Chun'an, Guangyuan, Qingchuan and remote villages in Hangzhou;
- During the flood disaster in Henan, China in October 2021, we donated smart devices with a total value of RMB1.5 million to support the rescue efforts in the flood-devastated areas; and
- In June 2021, we sponsored Xingzhi School in Daxing district of Beijing by donating school supply kits, whose students are mainly rural migrant children.

Integrating Sustainable and Environmental Friendly Practices into Our Business Operations

Although our business operations do not directly produce pollutants that directly affect the environment, we endeavor to implement sustainable and economically friendly practices in our own operations to reduce our carbon footprint such as reducing the energy consumption through, for example:

- Installing energy efficient lighting and ensuring lights are switched off when out of use either manually or through automatic sensors;
- Requiring double-sided printing of documents throughout our offices;
- Actively drive reductions in the use of paper, water and electricity throughout our offices;
- Switching off certain IT equipment or automatic power shutdown for certain systems and devices; and
- Air conditioning controls, with measures including requirements on lowest temperature, regular maintenance of air cooling technologies and optimal timing controls.

We believe that our policies can help us meet our environmental sustainability goals by reducing energy consumption in our operations.

Managing ESG Risks

We are committed to a thorough analysis and assessment process that will enable us to identify any material ESG risks and take actions to address these risks timely and effectively. We identify, assess, manage and mitigate environmental, social and climate-related risks by having dedicated teams to take care of the lifecycle management of the corresponding project. For example, personnel from our human resources and government-related affairs departments are responsible for overseeing the management and monitoring of our waste management system and our energy saving and consumption control program to ensure that we achieve the goals of energy saving and consumption reduction. Our management also actively oversees the identification and monitoring of the actual and potential environmental, social and climate-related risks on our business, strategy and financial performance, and take these issues into account during the course of our business, strategic and financial planning. Our management will assess the likelihood of such risks occurring and the estimated magnitude of any potential impact. We may also engage independent third parties to evaluate the ESG risks and review our existing strategy, target and internal controls. Necessary improvement will then be implemented to mitigate any major ESG risks identified.

As a technology company, we do not currently have any material liabilities relating to health, work safety and environment, and do not expect that we will incur any material liabilities in this regard which could have any material adverse impact on our business and operating results. However, potential risks associated with climate change or other climate-related issues may have financial implications for us. For instance, extreme weather conditions may cause suspension or disruption to our business operation and have impact on our financial conditions. Extreme weather may also cause disruptions for our suppliers, which may in turn adversely impact our ability to serve our customers and end users.

SEASONALITY

We have in the past experienced, and expect in the future to continue to experience, seasonal fluctuations in our revenues and sales from time to time, as a result of the holiday season and customers' buying patterns. We typically experience lower growth in revenues in the first quarter as a result the reduced production capacities of OEMs located in China due to the annual Lunar New Year holidays. We expect the historical seasonality trends to continue to have a material impact on our results of operations and financial condition. See "Item 3. Key Information—3.D.Risk Factors—Risks Related to Our Business and Industry—Seasonality may cause fluctuations in our sales and operating results."

COMPETITION

The global IoT platform market is rapidly evolving and increasingly competitive. Currently, our competitors include both large, well established IoT service providers, and less-established IoT companies or companies that offer capabilities that compete with some of our offerings. For instance, we compete in the ordinary course of business with technology companies providing IoT services and solutions, Internet-related services and products for IoT, and IoT-enabling platforms, and e-commerce companies offering IoT-related cloud products and services.

We believe that none of our competitors currently competes directly with us across all of our offerings, and we compete favorably on the basis of the factors below:

- ability to support multiple use cases on a single platform;
- ease of deployment, implementation and use;
- platform performance, interoperability, scalability and reliability;
- ability to help customers achieve global IoT deployment;
- ability to build a supply chain ecosystem;
- customer support and platform maintenance;

- brand awareness and reputation;
- sales and marketing efforts; and
- ability to ensure data security and privacy.

INSURANCE

We maintain liability insurance policies to cover potential product liability claims, cybersecurity insurance policies to cover the costs associated with a breach of third-party data in the event that the data is lost or stolen, and technical errors & omissions policies for liabilities in connection with failures of a service or software. Consistent with customary industry practice in the PRC and the other markets in which we operate, we do not maintain key-man life insurance.

LICENSES AND PERMITS

As of the date of this annual report, we have obtained all requisite licenses, permits, approvals and certificates from relevant regulatory authorities that are material to our operations. Our PRC legal counsel is of the view that we had complied with the relevant applicable PRC laws relating to the required permits and licenses to our business operations in all material respects in 2020, 2021, and up to the date of this annual report. Based on the understanding of the relevant PRC laws and regulations, our PRC legal counsel has also advised us that, to the best of their knowledge, there should be no material legal impediment for us to renew these licenses, permits or certificates as long as we comply with the relevant legal requirements and we take all necessary steps and submit the relevant applications in accordance with the requirements and schedules prescribed by the applicable PRC laws and regulations.

The following table sets forth details of selected licenses, permissions and approvals held by our PRC subsidiaries and VIE:

License/Permit	Holder	Issuing Authority	Grant Dates	Expiration Date
Registration and Filing of Foreign Trade Operator	Tuya Information	Hangzhou City Xihu Commission of Commerce	February 15, 2022	N/A
Registration of Consignee or Consignor of Imported or Exported Goods	Tuya Information	Hangzhou Customs	May 11, 2018	Long term
Registration and Filing of Foreign Trade Operator	Zhejiang Tuya	Hangzhou City Xihu District Commission of Commerce	November 12, 2021	N/A
Registration of Consignee or Consignor of Imported or Exported Goods	Zhejiang Tuya	Qianjiang Customs	May 27, 2020	Long term
Value-Added Telecommunications Services Operating License (Online data processing and transaction processing services (only for operational e-commerce), excluding Internet financial services as online lending information intermediaries)	Hangzhou Tuya Technology (the VIE)	Zhejiang Communications Administration	May 14, 2021	May 13, 2026

For the consequences to us and investors if we do not receive or maintain requisite licenses, permissions or approvals or if applicable laws, regulations, or interpretations change and we are required to obtain additional permissions or approvals in the future, see "Item 3. Key Information—3.D. Risk Factors—Risk Related to Our Business and Industry—Our failure to obtain, maintain or renew other licenses, approvals, permits, registrations or filings necessary to conduct our operations in China could have a material adverse impact on our business, financial condition and results of operations."

REGULATION

Regulation Relating to Foreign Investment

Investments activities in China by foreign investors are principally governed by the Encouraged Industries Catalog for Foreign Investment (2020 version) (the "Catalog") which was promulgated by the Ministry of Commerce (the "MOFCOM") and the National Development and Reform Commission (the "NDRC") on December 27, 2020 and became effective on January 27, 2021 and the Special Administrative Measures for Foreign Investment Access (Negative List 2021) (the "Negative List (2021)"), which was promulgated by the MOFCOM and the NDRC on December 27, 2021 and became effective on January 1, 2022. The Catalog and the Negative List (2021) set forth the industries in which foreign investments are encouraged, restricted and prohibited. Industries that are not listed in any of these three categories are generally open to foreign investment unless otherwise specifically restricted by other PRC rules and regulations. Article 6 of the Interpretation Note of the Negative List (2021) provides that, where a domestic enterprise engaged in the business in the prohibited areas of the Negative List (2021) seeks to issue and list its shares overseas, it shall complete the examination process and obtain approval of the relevant competent authorities of the State, the foreign investor shall not participate in the operation and management of the enterprise, and its shareholding percentage shall be subject to the relevant provisions on the administration of domestic securities investment by foreign investors. On January 18, 2022, the NDRC held a press conference to further clarify the position of Article 6, during which the spokesman made it clear that Article 6 shall only be applicable to the situations where domestic enterprises were seeking a direct overseas issuance and listing (i.e. H-shares listing).

According to the Negative List (2021), the foreign equity interests ownership of entities that engage in value-added telecommunications business (except for e-commerce, domestic multi-party communication, storage and forwarding and call center) must not exceed 50%.

On March 15, 2019, the National People's Congress approved the Foreign Investment Law of the PRC (the "Foreign Investment Law"), which took effect on January 1, 2020 and replaced the Sino-Foreign Equity Joint Venture Enterprise Law of the PRC, the Sino-Foreign Cooperative Joint Venture Enterprise Law of the PRC and the Wholly Foreign-Invested Enterprise Law of the PRC and became the legal foundation for foreign investment in the PRC. On December 26, 2019, the State Council issued the Regulations on Implementing the Foreign Investment Law of the PRC (the "Implementation Rules") which took effect on January 1, 2020 and replaced the Regulations on Implementing the Sino-Foreign Equity Joint Venture Enterprise Law of the PRC, Provisional Regulations on the Duration of Sino-Foreign Equity Joint Venture Enterprise Law, the Regulations on Implementing the Wholly Foreign-Invested Enterprise Law of the PRC and the Regulations on Implementing the Sino-foreign Cooperative Joint Venture Enterprise Law of the PRC. Pursuant to the Foreign Investment Law and the Implementation Rules, the existing foreign-invested enterprises established prior to the effective date of the Foreign Investment Law are allowed to keep their corporate organization forms for five years from the effectiveness of the Foreign Investment Law before such existing foreign-invested enterprises change their organization forms and organization structures in accordance with the Company Law of the People's Republic of China (the "Company Law"), the Partnership Enterprise Law of the PRC and other applicable laws.

Pursuant to the Foreign Investment Law, foreign investment means the investment activities within the PRC directly or indirectly conducted by foreign natural persons, enterprises, and other organizations (the "foreign investor"), including the following circumstances: (1) a foreign investor, individually or collectively with other investors, establishes a foreign-invested enterprise within PRC; (2) a foreign investor acquires any shares, equities, portion of property, or other similar interest in an enterprise within the PRC;(3) a foreign investor, individually or collectively with other investors, invests in a new project within the PRC; and (4) foreign investors invest in the PRC through any other methods under laws, administrative regulations, or provisions prescribed by the State Council of the PRC. The PRC applies the administrative system of pre-establishment national treatment plus negative list to foreign investment.

On December 30, 2019, the MOFCOM and the State Administration for Market Regulation (the "SAMR") issued the Measures for the Reporting of Foreign Investment Information, which took effect on January 1, 2020 and replaced the Interim Measures for the Recordation Administration of the Formation and Modification of Foreign-Funded Enterprises, and thus for foreign investors carrying out investment activities directly or indirectly in China, instead of filing formalities, foreign investors shall report their foreign investment information to the commerce authorities.

Regulation Relating to Value-Added Telecommunication Services

The Telecommunications Regulations of the People's Republic of China (the "Telecommunications Regulations"), promulgated by the State Council on September 25, 2000 and last amended on February 6, 2016, provide a regulatory framework for telecommunications services providers in mainland China. The Telecommunications Regulations require telecommunications services providers to obtain an operating license prior to the commencement of their operations. The Telecommunications Regulations categorize telecommunications businesses into basic telecommunications businesses and value-added telecommunications businesses, according to the Catalog of Telecommunications Business, attached to the Telecommunications Regulations and last amended by the Ministry of Industry and Information Technology ("MIIT") on June 6, 2019.

Regulation Relating to Cyber Security, Data Security and Privacy Protection

PRC

Cyber Security

On December 28, 2000, the SCNPC enacted the Decision on the Protection of Internet Security, as amended on August 27, 2009, which provides that the following activities conducted through the internet are subject to criminal liabilities:(1) gaining improper entry into any of the computer information networks relating to state affairs, national defensive affairs, or cutting-edge science and technology; (2) violation of relevant provisions of the State in the form of unauthorized interruption of any computer network or communication service, as a result of which the computer network or communication system cannot function normally; (3) spreading rumor, slander or other harmful information via the internet for the purpose of inciting subversion of the state political power;(4) stealing or divulging state secrets, intelligence or military secrets via internet; (5) spreading false or inappropriate commercial information; or (6) infringing on the intellectual property.

On December 13, 2005, the Ministry of Public Security issued the Provisions on the Technical Measures for Internet Security Protection, which took effect on March 1, 2006. These regulations require internet service providers to take proper measures including anti-virus, data back-up, keeping records of certain information such as the log-in and exit time of users, and other related measures, and to keep records of certain information about their users for at least 60 days. On June 22, 2007, the Ministry of Public Security, State Secrecy Bureau, State Cryptography Administration and the Information Office of the State Council jointly promulgated the Administrative Measures for the Multi-level Protection of Information Security, under which the security protection grade of an information system may be classified into five grades. Companies operating and using information systems shall protect the information systems and any system equal to or above level II as determined in accordance with these measures, a record-filing with the competent authority is required.

The Cybersecurity Law of the PRC (the"Cybersecurity Law"), as adopted by the SCNPC on November 7, 2016, has come into force on June 1, 2017. Regarded as the fundamental law in the area of cybersecurity in China, the Cybersecurity Law regulates network operators and others from the following perspectives: the principle of cyberspace sovereignty, security obligations of network operators and providers of network products and services, protection of personal information, protection of critical information infrastructure, data use and cross-border transfer, network interoperability and standardization. Network operators shall, according to the requirements of the rules for graded protection of cybersecurity, fulfill security protection obligations, so as to ensure that the network is free from interference, damage or unauthorized access, and prevent network data from being divulged, stolen or falsified. In addition, any network operator to collect personal information shall follow the principles of legitimacy, rationality and necessity and shall not collect or use any personal information without due authorization of the person whose personal information is collected. Each individual is entitled to require a network operator to delete his or her personal information if he or she finds that collection and use of such information by such operator violate the laws, administrative regulations or the agreement by and between such network operator and such individual; and is entitled to require any network operator to make corrections if he or she finds errors in such information collected and stored by such network operator. Such network operator shall take measures to delete the information or correct the error.

On December 28, 2021, the CAC and certain other PRC regulatory authorities promulgated the Measures for Cybersecurity Review (the "Cybersecurity Review Measures"), which provides that (i) network platform operators holding over one million users' personal information shall apply with the Cybersecurity Review Office for a cybersecurity review when listing in a foreign country, and (ii) operators of "critical information infrastructure" that intend to purchase network products and services that will or may affect national security shall apply for a cybersecurity review, and (iii) network platform operators carrying out data processing that will affect or may affect national security shall apply for a cybersecurity review. The Cybersecurity Review Measures took effect on February 15, 2022 and replace the Measures for Cybersecurity Review promulgated in April 2020. For a detailed discussion of the risks and uncertainties related to our compliance with regualtions on cyber security, please see "Item 3. Key Information—3.D.Risk Factors—Risks Related to our Business and Industry—Compliance with the rapidly evolving landscape of global data privacy and data security laws may be challenging, and any failure or perceived failure to comply with such laws, or other concerns about our practices or policies with respect to the processing of personal information, could damage our reputation and deter current and potential customers and end users from using our platform and products and services or subject us to significant compliance costs or penalties, which could materially and adversely affect our business, financial condition and results of operations."

Data Security

On June 10, 2021, the SCNPC promulgated the Data Security Law of the PRC (the "Data Security Law"), which took effect on September 1, 2021. According to the Data Security Law, the enterprises conducting data processing activities shall establish and improve their data security management systems, organize data security trainings and adopt corresponding technical measures and other necessary measures, with a view to guaranteeing the data security. Chapter 4 of the Data Security Law provides for the obligations of general data processing and data security protection, including: (1) establishing and improving the whole-process data security management system; (2) strengthening risk monitoring and properly handling data security incidents; and (3) legally and properly collecting and using data. According to the materials provided by the company, the company has established a relatively complete data security management system, organized and carried out data security education and training, adopted corresponding technical measures and organizations to protect data security, formulated a data security incident management system, carried out risk monitoring and assessment, handled information security level protection filing and assessment for call center service platforms, and performed corresponding network security level protection obligations. In addition, pursuant to the Data Security Law, the State shall establish a data security system to administer data at different levels and by different categories, and impose specific compliance obligations on processors of important data, including: (1) specifying the person and institution responsible for data security and implementing data security protection responsibilities; (2) conducting regular risk assessment of its data processing activities; and (3) fulfilling the regulatory requirements for transmitting important data overseas. Further, remedial measures shall be taken immediately upon discovery of any data security defects or bugs, and users shall be timely notified and competent authorities shall be informed in accordance with relevant provisions if any data security incident occurs. If an enterprise conducting data processing activities fails to meet such requirements, it would be subject to regulatory penalties, including fine, suspension of the relevant business, close of business for rectification and revocation of the relevant business permit or business license.

On October 29, 2021, the CAC published Measures on Security Assessments for the Cross-border Transfer of Data (Draft for Comments) (the "Consultation Draft") which is applicable to cross-border transfers of personal information and important data collected and generated in China under certain circumstances. Apart from that, the Consultation Draft provides detailed requirements for contracts concluded between data processors and overseas recipients, including but not limited to the purpose of cross-border data transfer, the overseas storage site, the restrictions concerning the transfer of cross-border data from overseas recipients to other organizations and individuals, the security measures to be taken by the overseas recipients when there is a material change in the actual control or scope of business, liability for breach of data security obligations and binding and enforceable dispute resolution provisions and the proper emergency disposal to be taken in the event of risks such as data breaches. The Consultation Draft is still subject to public comments and has not come into effect.

On November 14, 2021, the CAC commenced to publicly solicit comments on the Regulations on the Administration of Cyber Data Security (Draft for Comments) (the "Draft Cyber Data Security Regulation"). The Draft Cyber Data Security Regulation has not been officially enacted as of the date of this annual report. According to the Draft Cyber Data Security Regulation, data processors shall apply for a cybersecurity review when carrying out the following activities: (1) the merger, reorganization or division of internet platform operators that have acquired a large number of data resources related to national security, economic development or public interests, which affect or may affect national security; (2) data processors that handle personal information of more than one million people contemplating to list their securities "in a foreign country"; (3) data processors contemplating to list its securities on a stock exchange in Hong Kong, which affects or may affect national security; and (4) other data processing activities that affect or may affect national security. According to the PRC National Security Law, "national security" refers to a status in which the regime, sovereignty, unity, territorial integrity, welfare of the people, sustainable economic and social development, and other vital interests of the state are relatively not in danger and not threatened internally or externally and the ability to maintain a sustained security status. However, the criteria for determining the circumstances that "affect or may affect national security" for the purpose of the Draft Cyber Data Security Regulation remain unclear and is subject to further clarification by the CAC.

Privacy Protection

The PRC Constitution states that PRC law protects the freedom and privacy of communications of citizens and prohibits infringement of such rights. In recent years, PRC government authorities have enacted legislation on Internet use to protect personal information from any unauthorized disclosure. On May 28, 2020, the National People's Congress of the PRC approved Civil Code of the PRC, which took effect on January 1, 2021. Pursuant to Civil Code of the PRC, the personal information of a natural person shall be protected by the laws. Any organization or individual shall legally obtain such personal information of others when necessary and ensure the safety of such information, and shall not illegally collect, use, process or transmit personal information of others, or illegally purchase or sell, provide or make public personal information of others. The Administrative Measures on Internet Information Services, which was issued by the State Council on September 25, 2000, and revised on January 8, 2011, prohibit ICP service operators from insulting or slandering a third-party or infringing the lawful rights and interests of a third-party.

On December 29, 2011, the MIIT promulgated the Several Provisions on Regulating the Market Order of Internet Information Services, which became effective on March 15, 2012. On December 28, 2012, the SCNPC promulgated the Decision on Strengthening Network Information Protection to enhance the legal protection of information security and privacy on the internet. The Provisions on Protection of Personal Information of Telecommunications and Internet Users promulgated by the MIIT on July 16, 2013 contains detailed requirements on the use and collection of personal information as well as the security measures to be taken by internet service providers. Specifically, (1) the users' personal information shall not be collected without prior consent; (2) the personal information shall not be collected other than those necessary for internet service providers to provide services; (3) the personal information shall be kept strictly confidential; and (4) a series of detailed measures shall be taken to prevent any divulge, damage, tamper or loss of personal information of users.

The Administrative Provisions on Security Vulnerability of Network Products (the "Provisions") was jointly promulgated by the MIIT, the CAC and the MPS on 12 July 2021 and took effect on 1 September 2021. Network product providers, network operators as well as organisations or individuals engaging in the discovery, collection, release and other activities of network product security vulnerability are subject to the Provisions and shall establish channels to receive information of security vulnerability of their respective network products and shall examine and fix such security vulnerability in a timely manner. Network product providers are required to report relevant information of security vulnerability of network products with the MIIT within two days and to provide technical support for network product users. Network operators shall take measures to examine and fix security vulnerability after discovering or acknowledging that their networks, information systems or equipment have security loopholes. According to the Provisions, the breaching parties may be subject to administrative penalty as regulated in accordance with the Cyber Security Law. Since the Provisions is relatively new, uncertainties still exist in relation to its interpretation and implementation.

Pursuant to the Notice of the Supreme People's Court, the Supreme People's Procuratorate and the Ministry of Public Security on Legally Punishing Criminal Activities Infringing upon the Personal Information of Citizens, issued in April 23, 2013, and the Interpretation of the Supreme People's Court and the Supreme People's Procuratorate on Several Issues regarding Legal Application in Criminal Cases Infringing upon the Personal Information of Citizens, which was issued on May 8, 2017 and took effect on June 1, 2017, the following activities may constitute the crime of infringing upon a citizen's personal information: (1) providing a citizen's personal information to specified persons or releasing a citizen's personal information online or through other methods in violation of relevant national provisions; (2) providing legitimately collected information relating to a citizen to others without such citizen's consent (unless the information is processed, not traceable to a specific person and not recoverable); (3) collecting a citizen's personal information in violation of applicable rules and regulations when performing a duty or providing services; or (4) collecting a citizen's personal information by purchasing, accepting or exchanging such information in violation of applicable rules and regulations. Pursuant Civil Code of the PRC, the collection, storage, use, process, transmission, provision and disclosure of personal information shall follow the principles of legitimacy, properness and necessity.

The Cybersecurity Law provides that network operators shall obtain the individual's prior consent before collecting the personal information of such individual and take necessary technical measures or other appropriate measures to protect the personal information, and shall not provide the personal information to any third-party without the individual's prior consent unless such personal information has been processed in a proper way that a specific person will not be identified. For the operators of crucial information infrastructure, the personal information and crucial data must be stored within the territory of the People's Republic of China. Where such data need to be provided to overseas parties due to business requirements, a security assessment shall be conducted before the transmission of the data.

On August 20, 2021, the SCNPC promulgated the Personal Information Protection Law of the PRC (the "Personal Information Protection Law"), which took effect on November 1, 2021. The law aims to protect the rights and interests of personal information and regulate the processing of personal information. The Personal Information Protection Law stipulates certain important concepts with respect to personal information processing: (1) "personal information" refers to all kinds of information related to identified or identifiable natural persons recorded by electronic or other means, excluding the information processed anonymously; (2) "processing of personal information" includes the collection, storage, use, processing, transmission, provision, disclosure and deletion, etc. of personal information; and (3) "personal information processor" refers to an organization or individual that independently determines the purpose and method of the processing in the processing of personal information.

The Personal Information Protection Law also stipulates the obligations in the circumstance of entrusted processing. Where a personal information processor entrusts others with the processing of personal information, 1) the personal information processor shall agree with the agent on substantial matters like purpose, term, method of entrusted processing, type of information and protection measures, as well as supervise the processing activities of the agent; 2) the agent shall process personal information strictly within the scope as agreed, and ensure the security of the personal information processed and assist the personal information processor to perform his legal obligations.

On 22 August 2019, the CAC issued the Regulation on Cyber Protection of Children's Personal Information, effective on October 1, 2019. Network operators are required to establish special policies and user agreements to protect children's personal information, and to appoint special personnel in charge of protecting children's personal information. Network operators who collect, use, transfer or disclose personal information of children are required to, in a prominent and clear way, notify and obtain consent from children's guardians.

On 28 November 2019, the Secretary Bureau of the CAC, the General Office of the MIIT, the General Office of the Ministry of Public Security and the General Office of the SAMR promulgated the Method for Identifying the Illegal Collection and Use of Personal Information by Apps, and took effect on November 28, 2019, which provides guidance for the regulatory authorities to identify the illegal collection and use of personal information through mobile apps, and for the app operators to conduct self-examination and self-correction and for other participants to voluntarily monitor compliance. The Method for Identifying the Illegal Collection and Use of Personal Information by Apps lists six types of illegal collection and usage of personal information, including "failure to publish rules on the collection and usage of personal information", "failure to expressly state the purpose, manner and scope of the collection and usage of personal information", "collecting and using personal information without obtaining consents from users", "collecting personal information irrelevant to the services provided", "providing personal information to other parties without obtaining consent" and "failure to provide the function of deleting or correcting personal information as required by law or failure to publish the methods for complaints and reports or other information". For a detailed discussion of the risks and uncertainties related to our compliance with regualtions on privacy protection, please see "Item 3. Key Inforamtion—3.D.Risk Factors—Risks Related to our Business and Industry—Compliance with the rapidly evolving landscape of global data privacy and data security laws may be challenging, and any failure or perceived failure to comply with such laws, or other concerns about our practices or policies with respect to the processing of personal information, could damage our reputation and deter current and potential customers and end users from using our platform and products and services or subject us to significant compliance costs or penalties, which could materially and adversely affect our business, financial condition and results of operations."

EU and the U.S.

The following is a summary of selected data security and privacy laws of the EU and the U.S. We believe these laws and regulations are relevant to our business operations because certain of our data centers, as well as many of the brands we serve, are located in the EU or the U.S. We believe many of these laws and regulations, such as the General Data Protection Regulation (EU) 2016/679 ("GDPR"), represent leading standards of data security and privacy in the world and we have adopted internal controls, policies and procedures that we believe are consistent with the applicable standards under such laws and regulations. We have also completed information security, privacy and compliance certifications and validations from top privacy compliance and cyber security firms, such as TrustArc. For more information, see "Item 4. Information on the Company—4.B. Business Overview—Data Security and Privacy."

The GDPR, which applies to the collection, use, storage, retention, transfer, disclosure and other processing of personal data obtained from individuals located in the EU or by businesses operating within the EU, became effective on May 25, 2018 and has resulted, and will continue to result, in significantly greater compliance burdens and costs for companies with customers, end users, or operations in the EU. The GDPR places stringent obligations and operational requirements on us as both a processor and controller of personal data and could make it more difficult or more costly for us to use and share personal data. For example, requirements placed on data controllers include, among other things, transparent and expanded disclosure to data subjects about how their personal data is to be used, limitations on retention of information, mandatory data breach notification requirements, record keeping and documentation requirements, and higher standards for data controllers to demonstrate that they have obtained valid consent for certain data processing activities. Under the GDPR, data protection supervisory authorities are given various enforcement powers, including levying fines of up to 20 million Euros or up to 4% of an organization's annual worldwide turnover, whichever is greater, for the preceding financial year, for non-compliance. Data subjects also have the right to be compensated for damages suffered as a result of a controller or processor's non-compliance with the GDPR. While the GDPR provides a more harmonized approach to data protection regulation across the EU member states, it also gives EU member states certain areas of discretion and therefore laws and regulations in relation to certain data processing activities may differ on a member state by member state basis, which could further limit our ability to use and share personal data and could require localized changes to our operating model. In addition to the GDPR, the EU also has released a proposed Regulation on Privacy and Electronic Communications, or the ePrivacy Regulation, to replace the EU's current Privacy and Electronic Communications Directive, or the ePrivacy Directive, to, among other things, better align EU member states and the rules governing online tracking technologies and electronic communications, such as unsolicited marketing and cookies, with the requirements of the GDPR. While the ePrivacy Regulation was originally intended to be adopted on May 25, 2018 (alongside the GDPR), it is currently going through the European legislative process, and commentators now expect it to be adopted between 2022 and 2023.

Under the GDPR, restrictions are placed on transfers of personal data outside of the European Economic Area to countries which have not been deemed "adequate" by the European Commission (including the United States and the PRC). The Court of Justice of the European Union ("CJEU") issued a decision on July 16, 2020, invaliding the EU-US Privacy Shield Framework, which provided one mechanism for lawful cross-border transfers of personal data between the EU and the U.S. While the decision did not invalidate the use of the European Commission's approved standard contractual clauses, another mechanism for making lawful cross-border transfers, the decision has called the validity of standard contractual clauses into question under certain circumstances, and has made the legality of transferring personal data from the EU to the U.S. or various other jurisdictions outside of the EU more uncertain. Specifically, the CJEU stated that companies must now assess the validity of standard contractual clauses on a case by case basis, taking into consideration whether the standard contractual clauses provide sufficient protection in light of any access by the public authorities of the third country to where the personal data is transferred, and the relevant aspects of the legal system of such third country. While the European Commission recently published new standard contractual clauses for transferring personal data from the EU to third countries, and the European Data Protection Board issued certain recommendations relating to measures that supplement transfer tools to ensure compliance with the EU level of protection of personal data, the CJEU's decision has increased uncertainty surrounding data transfers from the EU to third countries that may not offer the same level of protection for data subjects' rights as the EU. Due to these recent regulatory changes and guidance, we may need to invest in additional technical, legal and organization safeguards in the future to avoid disruptions to data flows within our business and to and from our customers and service providers. Furthermore, this uncertainty, and its eventual resolution, may increase our costs of compliance, impede our ability to transfer data and conduct our business, and harm our business or results of operations.

In the United States, various federal regulators, including governmental agencies like the Federal Trade Commission, and states and state regulators, including in California, Colorado, Virginia and Illinois, have adopted, or are considering adopting, laws and regulations concerning personal data and data security, such as the California Consumer Privacy Act of 2018 ("CCPA"), the Colorado Privacy Act, the Virginia Consumer Data Protection Act, the California Internet of Things Security Law and the Illinois Biometric Information Privacy Act. This patchwork of legislation and regulation may give rise to conflicts or differing views of personal privacy rights. For example, certain state laws may be more stringent or broader in scope, or offer greater individual rights, with respect to personal data than federal, international or other state laws, and such laws may differ from each other, all of which may complicate compliance efforts. One such comprehensive privacy law in the United States is the CCPA, which came into effect on January 1, 2020. Among other things, the CCPA requires companies that process personal information of California residents to make new detailed disclosures to consumers about such companies' data collection, use and sharing practices, and gives California residents expanded rights to access and delete their personal information and to opt out of certain personal information sharing with (and sales of personal information to) third parties. The CCPA also provides for civil penalties for violations, as well as a private right of action for certain data breaches that result in the loss of personal data. This private right of action is expected to increase the likelihood of, and risks associated with, data breach litigation. The CCPA was amended in September 2018, November 2019 and September 2020, and it is possible that further amendments will be enacted, but even in its current form it remains unclear how various provisions of the CCPA will be interpreted and enforced. Additionally, a new privacy law, the California Privacy Rights Act ("CPRA"), was approved by California voters in the election of November 3, 2020. The CPRA, which will take effect in most material respects on January 1, 2023, modifies the CCPA significantly, including by expanding consumers' rights with respect to certain sensitive personal information, further restricting the use of cross-context behavioral advertising, establishing restrictions on the retention of personal information, expanding the types of data breaches subject to the CCPA's private right of action, providing for increased penalties for CPRA violations concerning California residents under the age of 16, and creating a new state agency to oversee implementation and enforcement efforts, potentially resulting in further uncertainty and requiring us to incur additional costs and expenses in an effort to comply. Other state laws are changing rapidly and there have been ongoing discussions and proposals in the U.S. Congress with respect to new federal data privacy and security laws to which we would become subject if enacted. Further, laws in all 50 U.S. states require businesses to provide notice under certain circumstances to customers whose personal data has been disclosed as a result of a data breach.

Registration for Import and Export Goods

Pursuant to the Customs Law of the People's Republic of China promulgated by the SCNPC on January 22, 1987 and amended on July 8, 2000, June 29, 2013, December 28, 2013, November 7, 2016 and November 4, 2017 unless otherwise stipulated, the declaration of import and export goods may be made by consignees and consignors themselves, and such formalities may also be completed by their entrusted customs brokers that have registered with the Customs. The consignees and consignors for import or export of goods and the customs brokers engaged in customs declaration shall register with the Customs in accordance with the laws.

Pursuant to the Administrative Provisions of the Customs of the People's Republic of China on the Record Filings of Customs Declaration Entities promulgated by the General Administration of Customs on November 19, 2021, where the consignee or consignor of imported or exported goods or a customs declaration enterprise applies for recordation, it shall obtain the qualification of market entities; particularly where the consignee or consignor of imported or exported goods applies for recordation, it shall be filed as a foreign trade business. Where the consignee or consignor of imported or exported goods or a customs declaration enterprise has undergone the formalities of recordation for customs declaration entities, branches that meet the requirements of the preceding paragraph may also apply for recordation for customs declaration entities.

In addition, the Foreign Trade Law of the PRC which was promulgated by the SCNPC on May 12, 1994 and last amended on November 7, 2016, and the Measures for the Record Filing and Registration of Foreign Trade Business Operators, which was promulgated by the MOFCOM on June 25, 2004 and last amended on November 30, 2019, require any foreign trade business operator that is engaged in the import and export of goods or technology shall be registered for archival purposes with the administrative department of foreign trade of the State Council or the institution entrusted thereby, unless it is otherwise provided for by any law, administrative regulation or the foreign trade department of the State Council. The specific measures for archival registration shall be formulated by the foreign trade department of the State Council. Where any foreign trade business operator that fails to file for record and registration according to relevant provisions, the customs may not handle the procedures of customs declarations and release of the import or export goods.

Regulations Relating to Product Quality

Products made in mainland China are subject to the Product Quality Law of the People's Republic of China, which was promulgated on February 22, 1993, last amended on December 29, 2018. According to the Product Quality Law, a manufacturer of a product is responsible to compensate for the damages to any person or property caused by the defect of such a product, unless the manufacturer is able to prove that: (i) it has not circulated the product; (ii) the defect did not exist at the time when the product was circulated; or (iii) scientific or technological knowledge at the time when the product was circulated was not such that it allowed the defect to be discovered.

The Consumer Rights and Interests Protection Law of the People's Republic of China (the "Consumers Protection Law") was promulgated on October 31, 1993 and became effective on January 1, 1994. The Consumers Protection Law has been further revised on August 27, 2009 and October 25, 2013. According to the Consumers Protection Law, unless otherwise provided by this law, an operator that provides products or services may bear civil liability in accordance with the Product Quality Law and other relevant laws and regulations.

According to the Administrative Regulations for Compulsory Product Certification, which was promulgated by the General Administration of Quality Supervision, Inspection and Quarantine P.R.C. (the "AQSIQ") (which has merged into the State Administration for Market Regulation) on July 3, 2009, products specified by the state shall not be delivered, sold, imported or used in other business activities until they are certified (the "Compulsory Product Certification") and labeled with China Compulsory Certification mark. For products that are subject to Compulsory Product Certification, the state implements unified product catalogs (the "3C Catalog"), unified compulsory requirements, standards and compliance assessment procedures in technical specification, unified certification marks and unified charging standards.

Regulation Relating to Intellectual Property Rights

Regulation on Patents

The SCNPC adopted the Patent Law of the PRC in 1984 and amended it in 1992, 2000, 2008 and 2020, respectively. A patentable invention or utility model must meet three conditions: novelty, inventiveness and practical applicability. Patents cannot be granted for scientific discoveries, rules and methods for intellectual activities, methods used to diagnose or treat diseases, animal and plant breeds methods of nuclear transformation or substances obtained by means of nuclear transformation. The Patent Office under the State Intellectual Property Office is responsible for receiving, examining and approving patent applications. A patent is valid for a twenty-year term for an invention and a ten-year term for a utility model and a fifteen-year term for a design, starting from the application date. Except under certain specific circumstances provided by law, any third party user must obtain consent or a proper license from the patent owner to use the patent, or else the use will constitute an infringement of the rights of the patent holder.

Regulation on Copyright

In accordance with the Copyright Law of the PRC which was promulgated by the SCNPC on September 7, 1990 and last amended on November 11, 2020, and took effect on June 1, 2021. Chinese citizens, legal persons or other entities own the copyright in their works whether published or not, including written works; oral works; music, comedy arts of talking and singing, dance and acrobatics; work of art and architecture work; photographic works; cinematographic work and work created by the method similar to the film production method; engineering design drawing, product design drawing, map, sketch and other graphic works and model works; computer software and other works specified by laws and administrative regulations. The rights a copyright owner has include but not limited to the following rights of the person and property rights: the right of publication, right of authorship, right of modification, right of integrity, right of reproduction, distribution right, rental right, right of network communication, translation right and right of compilation.

In accordance with the Regulations on the Protection of Computer Software promulgated by the State Council on June 4, 1991 and last amended on January 30, 2013, Chinese citizens, legal persons or other entities own the copyright, including the right of publication, right of authorship, right of modification, right of reproduction, distribution right, rental right, right of network communication, translation right and other right software copyright owners shall have in software developed by them, regard less of whether it has been published. In accordance with the Measures for the Registration of Computer Software Copyright promulgated by the National Copyright Administration on February 20, 2002, software copyrights, exclusive licensing contracts for software copyrights and software copyright transfer contracts shall be registered, and the National Copyright Administration shall be the competent authority for the administration of software copyright registration and designates the Copyright Protection Center of China as a software registration authority. The Copyright Protection Center of China shall grant a registration certificate to a computer software copyright applicant who complies with regulations.

Regulation on Trademark

Trademarks are protected by the Trademark Law of the PRC (Revised in 2019) (the "Trademark Law") which was promulgated on August 23, 1982 and last amended on April 23, 2019 and come into effect on November 1, 2019, respectively as well as the Implementation Regulation of Trademark Law of the PRC adopted by the State Council on August 3, 2002 (Revised in 2014). In China, registered trademarks include commodity trademarks, service trademarks, collective marks and certification marks.

The Trademark Office of China National Intellectual Property Administration handles trademark registrations and grants a term of ten years to registered trademarks. Trademarks are renewable every ten years where a registered trademark needs to be used after the expiration of its validity term. A registration renewal application shall be filed within six months prior to the expiration of the term. A trademark registrant may license its registered trademark to another party by entering into a trademark license contract. Trademark license agreements must be filed with the Trademark Office to be recorded. The licensor shall supervise the quality of the commodities on which the trademark is used, and the licensee shall guarantee the quality of such commodities. The Trademark Law has adopted a "first come, first file" principle with respect to trademark registration. Where trademark for which a registration application has been made is identical or similar to another trademark which has already been registered or been subject to a preliminary examination and approval for use on the same kind of or similar commodities or services, the application for registration of such trademark may be rejected. Any person applying for the registration of a trademark may not prejudice the existing right first obtained by others, nor may any person register in advance a trademark that has already been used by another party and has already gained a "sufficient degree of reputation" through such party's use. Trademarks are granted for a term of ten years. 12 months prior to the expiration of the ten-year term, the trademark registrant shall apply for the renewal of registration; if the trademark registrant does not make the renewal during the foregoing period, another six months extension can be granted.

Regulation on Domain Name

In accordance with the Measures for the Administration of Internet Domain Names which was promulgated by the MIIT on August 24, 2017 and took effect on November 1, 2017, whoever engages in Internet domain name services and its operation and maintenance, supervision and administration and other related activities within the territory of the People's Republic of China shall abide by these Measures.

In accordance with the Notice of the MIIT on Regulating the Use of Domain Names in Internet Information Services) which was promulgated by the MIIT of the PRC on November 27, 2017 and took effect on January 1, 2018, Internet access service providers shall verify the identity of each Internet information service provider, and shall not provide services to any Internet information service provider who fails to provide real identity information.

Regulation Relating to Employment and Social Welfare

Regulation on Labor

Pursuant to the Labor Contract Law of the PRC, issued on June 29, 2007, amended on December 28, 2012 and newly effective on July 1, 2013, labor contracts shall be concluded in writing if labor relationships are to be or have been established between enterprises or institutions and the laborers. Enterprises and institutions are forbidden to force laborers to work beyond the time limit and employers shall pay laborers for overtime work in accordance with national regulations. In addition, labor wages shall not be lower than local standards on minimum wages and shall be paid to laborers in a timely manner.

According to the Labor Law of the PRC promulgated on July 5, 1994 and last amended and newly effective on December 29, 2018, enterprises and institutions shall establish and improve their system of work place safety and sanitation, strictly abide by state rules and standards on workplace safety, educate laborers in labor safety and sanitation in the PRC. Labor safety and sanitation facilities shall comply with state-fixed standards.

Enterprises and institutions shall provide laborers with a safe workplace and sanitation conditions which are in compliance with state stipulations and the relevant articles of labor protection.

Regulation on Social Insurance and Housing Fund

As required under the Regulation of Insurance for Labor Injury implemented on January 1, 2004, amended on December 20, 2010 and effective on January 1, 2011, the Provisional Measures for Maternity Insurance of Employees of Corporation implemented on January 1, 1995, the Decisions on the Establishment of a Unified Program for Basic Old-Aged Pension Insurance of the State Council issued on July 16, 1997, the Decisions on the Establishment of the Medical Insurance Program for Urban Workers of the State Council promulgated on December 14, 1998, The Unemployment Insurance Measures promulgated on January 22, 1999,the Social Insurance Law of the PRC implemented on July 1, 2011 and amended on December 29, 2018 and the Interim Regulations on the Collection and Payment of Social Insurance Premiums promulgated on January 22, 1999 and amended on March 24, 2019, enterprises are obliged to provide their employees in the PRC with welfare schemes covering pension insurance, unemployment insurance, maternity insurance, labor injury insurance and medical insurance. These payments are made to local administrative authorities and any employer that fails to contribute may be fined and ordered to make up within a prescribed time limit.

In accordance with the Regulations on the Management of Housing Funds which was promulgated by the State Council on April 3, 1999 and last amended on March 24, 2019, enterprises must register at the competent managing center for housing funds and upon the examination by such managing center of housing funds, these enterprises shall complete procedures for opening an account at the relevant bank for the deposit of employees' housing funds. Enterprises are also required to pay and deposit housing funds on behalf of their employees in full and in a timely manner.

Regulation Relating to Tax

Enterprise Income Tax

According to the Enterprise Income Tax Law of the PRC (the "EIT Law") and its relevant implementation regulations, taxpayers consist of resident enterprises and non-resident enterprises.

Resident enterprises are defined as enterprises that are established in China in accordance with PRC laws, or that are established in accordance with the laws of foreign countries but whose actual or de facto control is administered from within the PRC. Non-resident enterprises are defined as enterprises that are set up in accordance with the laws of foreign countries and whose actual administration is conducted outside the PRC, but have established institutions or premises in the PRC, or have no such established institutions or premises but have income generated from inside the PRC. Under the EIT Law and relevant implementing regulations, a uniform enterprise income tax rate of 25% is applicable. However, if non-resident enterprises have not formed permanent establishments or premises in the PRC, or if they have formed permanent establishment institutions or premises in the PRC but there is no actual relationship between the relevant income derived in the PRC and the established institutions or premises set up by them, the enterprise income tax is, in that case, set at the rate of 10% for their income sourced from inside the PRC.

According to the EIT Law and relevant implementation regulations, the EIT tax rate of a high and new technology enterprise is 15%. Pursuant to the Administrative Measures for the Recognition of High and New Technology Enterprises, effected on January 1, 2008 and amended on January 29, 2016, the certificate of a high and new technology enterprise is valid for three years. An enterprise shall, after being accredited as a high-tech enterprise, fill out and submit the statements on annual conditions concerning the intellectual property rights, scientific and technical personnel, expenses on research and development and operating income for the previous year on the "website for the administration of accreditation of high-tech enterprises".

The Notice on Taxation Policies for Further Encouraging the Development of the Software and Integrated Circuit Industries,which was promulgated by the Ministry of Finance (the "MOF") and the State Administration of Taxation (the "SAT") on April 20, 2012 and effected on January 1, 2011 and the Notice on Issues Relating to the Preferential Policies for Enterprise Income Tax in Software and Integrated Circuits Industry promulgated by MOF, the SAT, the NDRC and the MIIT on May 4, 2016, provide that, upon certification, newly established integrated circuit design enterprises and eligible software enterprises shall be exempt from the enterprise income tax for the first two years of the preferential period, and shall be levied thereon at half of the statutory rate of 25%for the next three years until the expiration of the preferential period. The preferential period starts from the first profitable year before December 31, 2017.

Value-Added Tax

The Provisional Regulations of the PRC on Value-added Tax were promulgated by the State Council on December 13, 1993 and came into effect on January 1, 1994 which were subsequently amended on November 10, 2008 and came into effect on January 1, 2009 and amended on February 6, 2016 and November 19, 2017. The Detailed Rules for the Implementation of the Provisional Regulations of the PRC on Value-added Tax (Revised in 2011) was promulgated by the MOF on December 25, 1993 and subsequently amended on December 15, 2008 and October 28, 2011 (collectively, the "VAT Law"). On November 19, 2017, the State Council promulgated the Decisions on Abolishing the Provisional Regulations of the PRC on Business Tax and Amending the Provisional Regulations of the PRC on Value-added Tax, (the "Order 691"). According to the VAT Law and Order 691, all enterprises and individuals engaged in the sale of goods, the provision of processing, repair and replacement services, sales of services, intangible assets, real property and the importation of goods within the territory of the PRC are the taxpayers of VAT. The VAT tax rates generally applicable are simplified as 17%, 11%, 6% and 0%, and the VAT tax rate applicable to the small-scale taxpayers is 3%. The Notice of the MOF and the SAT on the Adjustment to VAT Rates, promulgated on April 4, 2018 and effective as of May 1, 2018. The Notice adjusted the VAT tax rates of 17% and 11% to 16%and 10%, respectively. According to the Announcement on Relevant Policies for Deepening Value-Added Tax Reform, with effect from April 1, 2019, the VAT tax rates of 16% and 10% are changed into 13% and 9%, respectively.

Dividend Withholding Tax

Furthermore, pursuant to the Notice of the SAT on the Issues concerning the Application of the Dividend Clauses of Tax Agreements, which was promulgated and effective on February 20, 2009, all of the following requirements should be satisfied where a fiscal resident of the other party to the tax agreement needs to be entitled to such tax agreement treatment as being taxed at a tax rate specified in the tax agreement for the dividends paid to it by a PRC resident company: (1) such a fiscal resident who obtains dividends should be a company as provided in the tax agreement; (2) owner's equity interests and voting shares of the PRC resident company directly owned by such a fiscal resident reaches a specified percentage; and (3) the equity interests of the PRC resident company directly owned by such a fiscal resident, at any time during the 12 months prior to the acquisition of the dividends, reaches a percentage specified in the tax agreement.

In addition, according to the Announcement of the State Taxation Administration on Issuing the Measures for Non-resident Taxpayers' Enjoyment of Treaty Benefits, promulgated by the SAT on October 14, 2019 and became effective on January 1, 2020, where a non-resident enterprise that receives dividends from a PRC resident enterprise wishes to enjoy the favorable tax benefits under the convention treatment, it may be entitled to the convention treatment itself when filing a tax return or making a withholding declaration through a withholding agent, subject to the subsequent administration by the tax authorities.

Regulation Relating to Foreign Exchange

Pursuant to the Foreign Exchange Administration Regulations of the PRC, as amended in August 5, 2008, the RMB is freely convertible for current account items, including the distribution of dividends, interest payments, trade and service-related foreign exchange transactions, but not for capital account items, such as direct investments, loans, repatriation of investments and investments in securities outside of China, unless the prior approval of SAFE is obtained and prior registration with SAFE is made. On May 10, 2013, SAFE promulgated the Notice of the SAFE on Issuing the Provisions on the Foreign Exchange Administration of Domestic Direct Investment of Foreign Investors and the Supporting Documents (the "SAFE Circular No. 21"), which was amended on October 10, 2018 and December 30, 2019. It provided for and simplified the operational steps and regulations on foreign exchange matters related to direct investment by foreign investors, including foreign exchange registration, account opening and use, receipt and payment of funds, and settlement and sales of foreign exchange.

Pursuant to the Notice of the SAFE on Further Improving and Adjusting Foreign Exchange Administration Policies for Direct Investment (the "SAFE Circular No. 59") promulgated by SAFE on November 19, 2012, that became effective on December 17, 2012 and was further amended on May 4, 2015, October 10, 2018 and December 30, 2019, approval is not required for the opening of an account entry in foreign exchange accounts under direct investment. SAFE Notice No. 59 also simplified the capital verification and confirmation formalities for foreign invested entities, the foreign capital and foreign exchange registration formalities required for the foreign investors to acquire equities from Chinese party, and further improved the administration on exchange settlement of foreign exchange capital of foreign invested entities.

Pursuant to the Notice of the SAFE on Issues concerning Foreign Exchange Administration of the Overseas Investment and Financing and the Round-tripping Investment Made by Domestic Residents through Special-Purpose Companies (the "SAFE Circular No. 37"), promulgated by SAFE and which became effective on July 4, 2014, (1) a PRC resident ("PRC Resident") shall register with the local SAFE branch before he or she contributes assets or equity interests in an overseas special purpose vehicle ("Overseas SPV"), that is directly established or controlled by the PRC Resident for the purpose of conducting investment or financing; and (2) following the initial registration, the PRC Resident is also required to register with the local SAFE branch for any major change, in respect of the Overseas SPV, including, among other things, a change of the Overseas SPV's PRC Resident shareholder(s), name of the Overseas SPV, term of operation, or any increase or reduction of the Overseas SPV's registered capital, share transfer or swap, and merger or division. Pursuant to SAFE Circular No.37, failure to comply with these registration procedures may result in penalties.

Pursuant to the Notice of the SAFE on Further Simplifying and Improving Policies for the Foreign Exchange Administration of Direct Investment (the "Circular 13"), which was promulgated on February 13, 2015 became effective on June 1, 2015 and was further amended on December 30, 2019, the foreign exchange registration under domestic direct investment and the foreign exchange registration under overseas direct investment is directly reviewed and handled by banks in accordance with the Circular 13, and the SAFE and its branches shall perform indirect regulation over the foreign exchange registration via banks.

Regulation Relating to Dividend Distribution

The principal laws, rule and regulations governing dividends distribution by companies in the PRC are the Company Law, which applies to both PRC domestic companies and foreign-invested companies, and the Foreign Investment Law and its implementing rules, which apply to foreign- invested companies. Under these laws, regulations and rules, both domestic companies and foreign-invested companies in the PRC are required to set aside as general reserves at least 10% of their after-tax profit, until the cumulative amount of their reserves reaches 50% of their registered capital. PRC companies are not permitted to distribute any profits until any losses from prior fiscal years have been offset. Profits retained from prior fiscal years may be distributed together with distributable profits from the current fiscal year.

Regulations Relating to Employee Equity Incentive Plan

Pursuant to SAFE Circular 37, PRC residents who participate in equity incentive plan in overseas non-publicly-listed companies may submit applications to SAFE or its local branches for the foreign exchange registration with respect to offshore special purpose companies. In addition, pursuant to the Notice of Issues Related to the Foreign Exchange Administration for Domestic Individuals Participating in Stock Incentive Plan of Overseas Listed Company (the "SAFE Circular 7") which was issued by the SAFE on February 15, 2012, employees, directors, supervisors, and other senior management participating in any equity incentive plan of an overseas publicly-listed company who are PRC citizens or who are non-PRC citizens residing in China for a continuous period of not less than one year, subject to a few exceptions, are required to register with SAFE through a domestic agency as regulated in SAFE Circular 7.

In addition, the SAT has issued certain circulars concerning employee stock options and restricted shares, including the Circular on Issues Concerning the Individual Income Tax on Share-option Incentives (the "Circular 461") which was promulgated and took effect on August 24, 2009, and the Notice on Measures Enhancing the Reform in Taxation and Stimulating the Vitality of Market Players which was promulgated and took effect on October 12, 2021. Under Circular 461 and other relevant laws and regulations, employees working in the PRC who exercise stock options or are granted restricted shares will be subject to PRC individual income tax. The PRC subsidiaries of an overseas listed company are required to file documents related to employee stock options and restricted shares with relevant tax authorities and to withhold individual income taxes of employees who exercise their stock option or purchase restricted shares. If the employees fail to pay or the PRC subsidiaries fail to withhold income tax in accordance with relevant laws and regulations, the PRC subsidiary may face sanctions imposed by the tax authorities or other PRC government authorities.

Regulation Relating to M&A and Overseas Listing

The Regulations on Mergers and Acquisitions of Domestic Enterprises by Foreign Investors (the "M&A Rules"), was promulgated by six PRC ministries including MOFCOM, the State-owned Assets Supervision and Administration Commission of the State Council, the SAT, the SAMR, the CSRC, and the SAFE on August 8, 2006, became effective on September 8, 2006, and was amended and became effective on June 22, 2009. The M&A Rules stipulate that a foreign investor is required to obtain necessary approvals when it: (1) acquires the equity of a domestic enterprise so as to convert the domestic enterprise into a foreign-invested enterprise; (2) subscribes for the increased capital of a domestic enterprise so as to convert the domestic enterprise into a foreign-invested enterprise; (3) establishes a foreign-invested enterprise through which it purchases the assets of any domestic enterprise and operates these assets; or (4) purchases the assets of a domestic enterprise, and then invests such assets to establish a foreign-invested enterprise. The M&A Rules, among other things, further prescribed that a special purpose vehicle, formed for overseas listing purposes and controlled directly or indirectly by PRC companies or individuals, shall be approved by the MOFCOM prior to its establishment and obtain the approval of the CSRC prior to the listing and trading of such special purpose vehicle's securities on an overseas stock exchange.

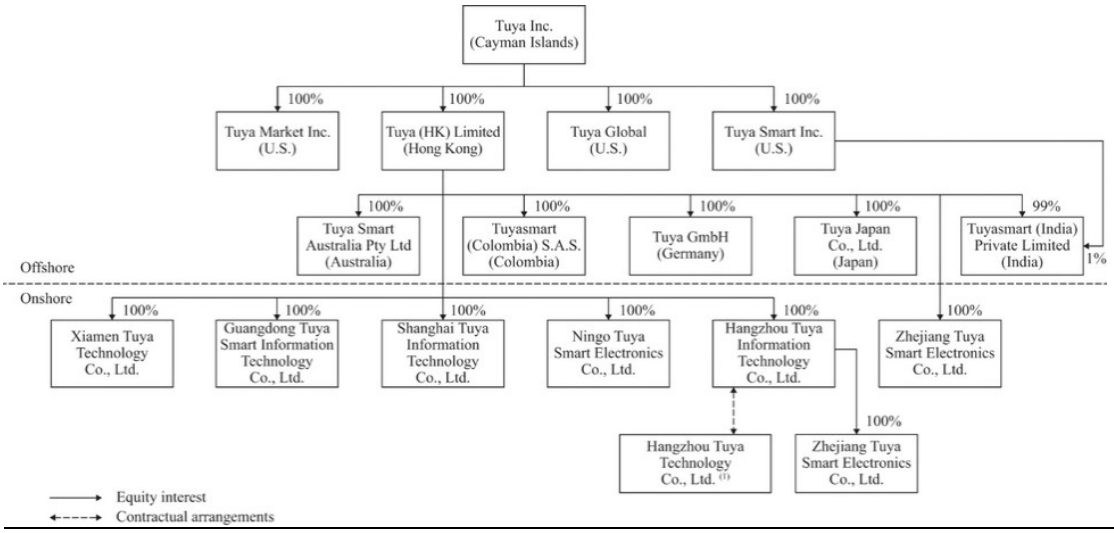
Pursuant to the Notice of the Foreign Investment Administration of the MOFCOM on Distributing the Manual of Guidance on Administration for Foreign Investment Access, which was issued and became effective on December 18, 2008 by the MOFCOM, notwithstanding the fact that (1) the domestic shareholder is connected with the foreign investor or not; or (2) the foreign investor is the existing shareholder or the new investor, the M&A Rules shall not apply to the transfer of an equity interest in an incorporated foreign-invested enterprise from the domestic shareholder to the foreign investor.

On December 24, 2021, the CSRC published the draft Regulations of the State Council on the Administration of Overseas Issuance and Listing of Securities by Domestic Companies (Draft for Comments) (the "Administrative Provisions") and the draft Measures for the Record-Filing of Overseas Issuance and Listing of Securities by Domestic companies (Draft for Comments) (the "Filing Measures") for public comments. Pursuant to these drafts, PRC domestic companies that seek to directly or indirectly issue or list their securities overseas shall file with CSRC certain required documents, and "PRC domestic companies" are defined to include both (i) PRC companies limited by shares, which seek direct issuance of shares and listing overseas, and (ii) offshore-incorporated companies whose main business operations are in China that seek indirect issuance of shares and listing overseas based on their onshore equity, assets or similar interests. More specifically, a "PRC domestic company" that seeks an initial public offering overseas, or a "PRC domestic company" already listed overseas who seeks to list its securities in another overseas market, shall file the required documents with CSRC within three business days after submitting the application documents for the foregoing transactions. The "PRC domestic company" may apply for the postponement of the disclosure of the filing result if the aforesaid application documents are submitted on a confidential or non-public basis. According to the Article 7 of the Administrative Provisions, the "PRC domestic company" are prohibited from seeking to directly or indirectly issue or list their securities overseas under the circumstances as follows: (i) there are circumstances where financing by listing is expressly prohibited by the laws and regulations of the State and the relevant provisions; (ii) the overseas issuance and listing threatens or endangers the national security as determined by the relevant competent department of the State Council in accordance with the law; (iii) there is any material ownership dispute in respect of equity, major assets, core technology, etc.; (iv) the domestic enterprise and its controlling shareholder or actual controller have committed a criminal offence of corruption, bribery, embezzlement of property, misappropriation of property or disruption of the order of the socialist market economy, or are under investigation by the judicial organ for suspected criminal offence or suspected major violation of law or regulation in the past three years; (v) the directors, supervisors and senior management personnel have been subject to administrative punishment in the past three years and the circumstance is serious, or are under investigation by the judicial organ for suspected criminal offence or suspected major violation of law or regulation in the past three years; and (vi) other circumstances determined by the State Council. As of the date of this annual report, it remains uncertain when the final Administrative Provisions and Filing Measures will be adopted. Uncertainties exist regarding the final form of these regulations as well as the interpretation and implementation thereof after promulgation.

On December 24, 2021, a spokesperson of the CSRC at a press conference in relation to the Administrative Provisions and the Filing Measures clarified that, among others: (i) the implementation of the Administrative Provisions and the Filing Measures aim to improve the supervisory and regulatory institution for overseas listing of enterprises and support enterprises to use overseas capital markets for financing and development in accordance with laws and regulations, not to tighten the regulatory policies for overseas listing, (ii) the Administrative Provisions and the Filing Measures will follow the legal principle of non-retroactivity and the CSRC would initiate the filing requirements and procedures with the new applicants ("New Applicants"), i.e. the new overseas initial public offering applicants, and the stock enterprises ("Stock Enterprises"), i.e. the existing overseas-listed companies that had subsequent financing activities, while the remaining Stock Enterprises will be separately granted a sufficient transitional period, (iii) prior to filling with CSRC, the enterprises shall obtain the regulatory opinion or filing or approval documents from the administrative authorities of the specific industries only if these authorities explicitly set the relevant requirements regarding listing overseas in the regulations, and (iv) on the premise of complying with the PRC laws and regulations, enterprises adopting a VIE structure that meet compliance requirements could pursue overseas listing after filing with the CSRC.

4.C. Organizational Structure

The following chart illustrates our corporate structure, including our significant subsidiaries as that term is defined under Section 1-02 of Regulation S-X under the Securities Act, the VIE and certain other subsidiaries, as of the date of this annual report.



Note:

(1) Shareholders of Hangzhou Tuya Technology are Xueji (Jerry) Wang (our director and CEO), Liaohan (Leo) Chen (our director), Yaona Lin (our employee), Ruixin Zhou (our CTO) and Peihong Chen (our employee), each holding approximately 60.7%, 13.1%, 11.5%, 9.8% and 4.9%, respectively, of Hangzhou Tuya Technology's equity interests. Xueji (Jerry) Wang, Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen each holds approximately 19.9%, 5.0%, 4.4%, 3.8% and 1.8%, respectively, of our equity interests.

Transfer of Funds and Other Assets through Our Organization

As of December 31, 2021, through its intermediate holding company, Tuya Inc. had made cumulative capital contributions of US$363.9 million to its PRC subsidiaries. These funds have been used by our PRC subsidiaries mainly for their business operations.

The VIE may transfer cash to Tuya Information, our wholly-owned subsidiary in the PRC, by paying service fees pursuant to the contractual arrangements through which we control and consolidate the financial results of the VIE. In each of 2019, 2020 and 2021, the VIE paid nil service fees to Tuya Information pursuant to the contractual arrangements.

Because Tuya Inc. controls the VIE through contractual arrangements, it is not able to make direct capital contribution to the VIE. Nonetheless, Tuya Inc. and its subsidiaries may transfer cash to the VIE by loans or by making payment to the VIE for inter-group transactions, subject to satisfaction of applicable government registration and approval requirements. In 2019, 2020 and 2021, Tuya Inc. and its subsidiaries did not make any loans to the VIE. In addition, Tuya Information may, from time to time, lend cash to the VIE or settle the VIE's payment obligations on behalf of VIE to provide temporary working capital support to the VIE. In 2019, 2020 and 2021, the net amounts of working capital support provided by Tuya Information to the VIE were RMB2.0 million, RMB0.2 million and RMB2.7 million (US$0.4 million), respectively. As of December 31, 2019, 2020 and 2021, the amounts owed by VIE to Tuya Information associated with the foregoing working capital support arrangements were RMB4.5 million, RMB4.6 million and RMB7.1 million (US$1.1 million), respectively. The VIE has historically funded its operations primarily using cash generated from its operating activities and the working capital support provided by Tuya Information.

In 2019, 2020 and 2021, no dividends or distributions were made to Tuya Inc. by its subsidiaries.

Tuya Inc. has not previously declared or paid any cash dividend or dividend in kind, and has no plan to declare or pay any dividends in the near future on our shares or the ADSs representing our Class A ordinary shares. We currently intend to retain our available funds and any future earnings to operate and expand our business. We currently do not have any plan to require our PRC subsidiaries to distribute their retained earnings and intend to retain them to operate and expand our business in the PRC. See "Item 8.—Financial Information—8.A. Consolidated Statements and Other Financial Information—Dividend Policy."

For the purpose of illustration, the below table reflects the hypothetical taxes that might be required to be paid within China, assuming that: (i) we have taxable earnings, and (ii) we determine to pay a dividend in the future:

	Taxation Scenario[1] Statutory Tax and Standard Rates
Hypothetical pre-tax earnings[2]	100 %
Tax on earnings at statutory rate of 25%	(25)%
Net earnings available for distribution	75 %
Withholding tax at standard rate of 10%[3]	(7.5)%
Net distribution to Parent/Shareholders	67.5 %

Notes:

(1) For purposes of this example, the tax calculation has been simplified. The hypothetical book pre-tax earnings amount, not considering timing differences, is assumed to equal taxable income in China.

(2) Under the terms of the contractual arrangements between us and the VIE, our PRC subsidiary may charge the VIE for services provided to the VIE. These service fees shall be recognized as expenses of the VIE, with a corresponding amount as service income by our PRC subsidiary and eliminate in consolidation. For income tax purposes, our PRC subsidiary and the VIE file income tax returns on a separate company basis. The service fees paid are recognized as a tax deduction by the VIE and as income by our PRC subsidiary and are tax neutral.

(3) Tuya Information, our wholly-owned PRC subsidiary, was eligible to enjoy a preferential tax rate of 15% from 2018 to 2020 to the extent it has taxable income under the EIT Law. As of December 31, 2021, the renewal application of Tuya Information's High and New Technology Enterprise ("HNTE") qualification was completed and Tuya Information continues qualifying as an HNTE and entitles to enjoy the 15% beneficial tax rate for the years ended December 31, 2022, 2023 and 2024. However, such rate is subject to qualification, is temporary in nature, and may not be available in a future period when distributions are paid. For purposes of this hypothetical example, the table above reflects a maximum tax scenario under which the full statutory rate would be effective.

(4) The PRC Enterprise Income Tax Law imposes a withholding income tax of 10% on dividends distributed by a foreign invested enterprise, or FIE, to its immediate holding company outside of China if such immediate holding company is considered as a non-resident enterprise without any establishment or place within China or if the received dividends have no connection with the establishment or place of such immediate holding company within China, unless such immediate holding company's jurisdiction of incorporation has a tax treaty with China that provides for a different withholding arrangement. According to the arrangement between Mainland China and Hong Kong Special Administrative Region on the Avoidance of Double Taxation and Prevention of Fiscal Evasion in August 2006, dividends paid by a FIE in China to its immediate holding company in Hong Kong can be subject to withholding tax at a rate of no more than 5% if the immediate holding company in Hong Kong owns directly at least 25% of the shares of the FIE and could be recognized as a Beneficial Owner of the dividend from PRC tax perspective.

The table above has been prepared under the assumption that all profits of the VIE will be distributed as fees to Tuya Information under tax neutral contractual arrangements. If in the future, the accumulated earnings of the VIE exceed the fees paid to Tuya Information, or if the current and contemplated fee structure between the intercompany entities is determined to be non-substantive and disallowed by Chinese tax authorities, we have other tax-planning strategies that can be deployed on a tax neutral basis. Should all tax planning strategies fail, the VIE could, as a matter of last resort, make a non-deductible transfer to our PRC subsidiary for the amounts of the stranded cash in the VIE. This would result in the double taxation of earnings: one at the VIE level (for non-deductible expenses) and one at Tuya Information level (for presumptive earnings on the transfer). Such a transfer and the related tax burdens would reduce our after-tax income to approximately 50.6% of the pre-tax income. Our management believes that there is only a remote possibility that this scenario would happen.

Restrictions on Foreign Exchange and the Ability to Transfer Cash between Entities, Across Borders and to U.S. Investors

In the future, if and when we become profitable, Tuya Inc.'s ability to pay dividends, if any, to its shareholders and ADS holders and to service any debt it may incur will depend upon dividends paid by our PRC subsidiaries. Under PRC laws and regulations, our PRC subsidiaries are subject to certain restrictions with respect to paying dividends or otherwise transferring any of their net assets offshore to Tuya Inc. In particular, under the current effective PRC laws and regulations, dividends may be paid only out of distributable profits. Distributable profits are the net profit as determined under PRC GAAP, less any recovery of accumulated losses and appropriations to statutory and other reserves required to be made. Each of our PRC subsidiaries is required to set aside at least 10% of its after-tax profits each year, after making up previous years' accumulated losses, if any, to fund certain statutory reserve funds, until the aggregate amount of such a fund reaches 50% of its registered capital. As a result, our PRC subsidiaries may not have sufficient distributable profits to pay dividends to us in the near future. For more information, see "Item 5. Operating and Financial Review and Prospect—5.A. Operating Results—Holding Company Structure."

Furthermore, if certain procedural requirements are satisfied, the payment of current account items, including profit distributions and trade and service related foreign exchange transactions, can be made in foreign currencies without prior approval from SAFE or its local branches. However, where RMB is to be converted into foreign currency and remitted out of China to pay capital expenses, such as the repayment of loans denominated in foreign currencies, approval from or registration with competent government authorities or its authorized banks is required. The PRC government may take measures at its discretion from time to time to restrict access to foreign currencies for current account or capital account transactions. If the foreign exchange control system prevents us from obtaining sufficient foreign currencies to satisfy our foreign currency demands, we may not be able to pay dividends in foreign currencies to our offshore intermediary holding companies or ultimate parent company, and therefore, our shareholders or investors in our ADSs. Further, we cannot assure you that new regulations or policies will not be promulgated in the future, which may further restrict the remittance of RMB into or out of the PRC. We cannot assure you, in light of the restrictions in place, or any amendment to be made from time to time, that our current or future PRC subsidiaries will be able to satisfy their respective payment obligations that are denominated in foreign currencies, including the remittance of dividends outside of the PRC. If any of our subsidiaries incurs debt on its own behalf in the future, the instruments governing such debt may restrict its ability to pay dividends to Tuya Inc. In addition, our PRC subsidiaries are required to make appropriations to certain statutory reserve funds, which are not distributable as cash dividends except in the event of a solvent liquidation of the companies.

For PRC and United States federal income tax consideration of an investment in the ADSs, see "Item 10. Additional Information —10.E. Taxation."

Contractual Arrangements with the VIE and the VIE's Respective Shareholders

Tuya Inc. is a Cayman Islands holding company and conducts its operations in China mainly through its PRC subsidiaries.

Investment in certain areas of the industries in which we currently operate and may operate are subject to restrictions under current PRC laws and regulations. After consultation with our PRC legal counsel, Jia Yuan Law Offices, we determined that it was not viable for us to hold Hangzhou Tuya Technology, the VIE, directly through equity ownership. Instead, we decided that, in line with common practice in the PRC for industries subject to foreign investment restrictions, we would gain effective control over, and receive all the economic benefits generated by the businesses currently operated by the VIE through the contractual arrangements between Tuya Information, on the one hand, and the VIE and the registered shareholders, on the other hand. As a result of these contractual arrangements, we exert effective control over, and are considered the primary beneficiary of, the VIE and consolidate its operating results in our financial statements under the U.S. GAAP.

Through these contractual arrangements, Tuya Information acquired effective control over the financial and operational policies of the VIE and has become entitled to all the economic benefits derived from the VIE's operations. The revenues generated by the VIE contributed less than 0.1% of our total revenues in each of 2019 and 2020. The revenue contribution from the VIE was nil in 2021. As of December 31, 2020 and 2021, the assets of the VIE, excluding amounts due from other companies in our group, represented 0.16% and 0.01% of our consolidated total assets, respectively. We expect the contribution of revenues and assets to our Group from the VIE to remain immaterial in the foreseeable future. Additionally, the VIE does not hold any licenses or permits that are material to our current business operations.

The contractual arrangements between Tuya Information, on the one hand, and the VIE and its shareholders, on the other hand, were initially entered into in December 2014 and were amended and restated in January 2022. The following is a summary of these contractual arrangements. For the complete text of these contractual arrangements, please see the copies filed as exhibits to this annual report.

In the opinion of Jia Yuan Law Offices, our PRC legal counsel, the execution and performance of the contractual arrangements do not violate the provisions of the Civil Code of the PRC which may lead to their invalidity, and are binding on the parties thereto. The contractual arrangements can be enforced in accordance with PRC laws, except that (a) the contractual arrangements provide that the arbitrator may impose restrictions on and/or dispose of our consolidated affiliated entity's equity interests or land and other assets (such as for award of remedies), grant injunction (such as for the conduct of business or compelling the transfer of assets), or grant other interim relief, or order winding up of our consolidated affiliated entity through arbitration, and that the courts with jurisdiction (including the courts in Hong Kong, the place of incorporation of the Company, the place of incorporation of the consolidated affiliated entity, and the place where the principal assets of the Company or our consolidated affiliated entity is located) shall have the right to grant interim relief in support of the arbitration, while under PRC laws, an arbitral body has no power to grant injunctive relief and may not directly issue a provisional or final liquidation order for the purpose of protecting assets of or equity interests in our consolidated affiliated entity in case of disputes. In addition, interim remedies or enforcement orders granted by overseas courts such as Hong Kong and the Cayman Islands may not be recognizable or enforceable in China. (b) the contractual arrangements provide that when our consolidated affiliated entity is liquidated or dissolved, persons recommended by the Tuya Information shall be appointed as permitted by the PRC laws to establish a liquidation team to manage the assets of our consolidated affiliated entity, while such arrangements may not be enforceable under PRC laws.

However, these contractual arrangements may not be as effective in providing control as direct ownership. There are substantial uncertainties regarding the interpretation and application of current or future PRC laws and regulations. We have been further advised by our PRC legal counsel that if the PRC government finds that the agreements that establish the VIE structure do not comply with applicable PRC laws and regulations, we could be subject to penalties including being required to cease the operations carried out through the VIE. For a detailed discussion of the risks and uncertainties related to these contractual arrangements and our corporate structure, please see "Item 3. Key Inforamtion–3.D.Risk Factors—Risks Related to Our Corporate Structure."

Exclusive Business Cooperation Agreement

Under this exclusive business cooperation agreement, Tuya Information has agreed to provide the following services to Hangzhou Tuya Technology:

- the licensing of software legally owned by Tuya Information;
- the development, maintenance and update of software involved in Hangzhou Tuya Technology's business;
- the design, installation, daily management, maintenance and updating of network system, hardware and databased design;
- the technical support and training for employees of Hangzhou Tuya Technology;
- the assistance in consultancy, collection and research of technology and market information (excluding market research business that wholly foreign-owned enterprises are prohibited from conducting under PRC law;
- the provision of business management consultation;
- the provision of marketing and promotion services;
- the leasing of equipment or properties; and
- other services requested by Hangzhou Tuya Technology from time to time to the extent permitted under PRC law.

Hangzhou Tuya Technology has agreed to pay services fees to Tuya Information on regular basis in discretion of Hangzhou Tuya Technology after considering certain factors as specified in the exclusive business cooperation agreement. The service fee shall be equivalent to the total income of Hangzhou Tuya Technology of each financial year, deducting the costs, expenses, taxes (excluding corporate income tax) and other statutory fees reserved or withdrawn. Hangzhou Tuya Technology shall pay the service fee to the bank account designated by Tuya Information within ten days after receiving notice and bill from Tuya Information.This agreement was effective from December 23, 2014 and will continue to be effective unless it is terminated by written notice of Tuya Information or according to the provisions in the agreement. Unless otherwise required by applicable laws, Hangzhou Tuya Technology shall not have any right to terminate this exclusive business cooperation agreement in any event.

Equity Interest Pledge Agreement

Xueji (Jerry) Wang, one of the shareholders of Hangzhou Tuya Technology, entered into an equity pledge agreement with Tuya Information and Hangzhou Tuya Technology, originally dated December 23, 2014 and amended and restated on August 23, 2019 and January 19, 2022, respectively. Each of Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen, the shareholders of Hangzhou Tuya Technology, entered into an equity pledge agreement with Tuya Information and Hangzhou Tuya Technology, each originally dated December 23, 2014, amended on August 23, 2019 and amended and restated on January 19, 2022. Under such equity interest pledge agreements, each of Xueji (Jerry) Wang, Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen pledged his or her respective equity interest in Hangzhou Tuya Technology to Tuya Information to secure his or her obligations under the applicable exclusive business cooperation agreement, exclusive option agreement, and powers of attorney. Each of Xueji (Jerry) Wang, Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen further agreed to not transfer or pledge his or her respective equity interest in Hangzhou Tuya Technology without the prior written consent of Tuya Information. Each of the equity pledge agreement will remain binding until the respective pledger, Xueji (Jerry) Wang, Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen, as the case may be, discharges all his or her obligations and pays all his or her indebtedness under the above-mentioned agreements. Once Tuya Information is permitted to directly hold the equity interest of Hangzhou Tuya Technology, and Hangzhou Tuya Technology is able to operate its business legally pursuant to the PRC laws and regulations, Tuya Information will exercise the equity purchase option under the Exclusive Option Agreement as soon as possible, so that it will directly operate the business of Hangzhou Tuya Technology or directly hold its equity interest. As the date of this annual report, the equity pledges under the equity interest pledge agreement have been registered with competent PRC regulatory authority.

Exclusive Option Agreement

Under the exclusive option agreement entered into by Tuya Information, Hangzhou Tuya Technology and Xueji (Jerry) Wang, originally dated December 23, 2014 and amended and restated on August 23, 2019 and January 19, 2022, respectively, and the exclusive option agreements entered into by Tuya Information, Hangzhou Tuya Technology and each of Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen, each originally dated December 23, 2014 and amended and restated on January 19, 2022, each of Xueji (Jerry) Wang, Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen granted Tuya Information an option to purchase all or a portion of his or her respective equity interest in Hangzhou Tuya Technology at a price equal to the higher of RMB1.0 and the minimum amount of consideration permitted by PRC law. In addition, under each exclusive purchase option agreement, Hangzhou Tuya Technology has granted Tuya Information an option to purchase all or a portion of the assets held by Hangzhou Tuya Technology or its subsidiaries for the minimum amount of consideration permitted by PRC law. Each of Hangzhou Tuya Technology, Xueji (Jerry) Wang, Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen agrees that, in the event that Tuya Information exercises the equity interest purchase option or the asset purchase option, all the consideration received by them for this purpose will be fully returned to Tuya Information upon the request of Tuya Information, as long as in compliance with the PRC laws and regulations. Each of Hangzhou Tuya Technology, Xueji (Jerry) Wang, Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen agreed not to transfer, mortgage or permit any security interest to be created on any equity interest in or material assets of Hangzhou Tuya Technology without the prior written consent of Tuya Information. Each exclusive purchase option agreement shall remain in effect until all of the equity interests in Hangzhou Tuya Technology have been acquired by Tuya Information.

Powers of Attorney

Pursuant to a series of powers of attorney issued by each of Xueji (Jerry) Wang, Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen and accepted by Tuya Information on January 19, 2022, each of Xueji (Jerry) Wang, Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen irrevocably appointed Tuya Information or any designated person as their exclusive agent and attorney to act on their behalf on all shareholder matters of Hangzhou Tuya Technology and exercise all rights as shareholders of Hangzhou Tuya Technology. Each of Xueji (Jerry) Wang, Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen will provide full assistance to Tuya Information with respect to the excersie of such rights. Each of Xueji (Jerry) Wang, Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen has undertaken that he will refrain from any action or omission that may cause any conflict of interest between himself and Tuya Information. These powers of attorney shall remain valid during the period that each of them is a shareholder of Hangzhou Tuya Technology.

Spousal Consents

Each of the spouse of Xueji (Jerry) Wang, Liaohan (Leo) Chen, Yaona Lin, Ruixin Zhou and Peihong Chen has signed a spousal consent. Under each of the spousal consent, the signing spouse agreed that the equity interests of Hangzhou Tuya Technology held and to be held by her spouse are her spouse's personal property and do not constitute the communal estatemarital assets of the signing spouse. The signing spouse unconditionally and irrevocably undertook to waive any rights or interests in such assets and not to make any assertions in connection with the equity interests in Hangzhou Tuya Technology held by her spouse. Moreover, each spouse agreed that the disposition of the equity interest in Hangzhou Tuya Technology which is held by and registered under the name of her spouse shall be made pursuant to the above-mentioned exclusive business cooperation agreement, exclusive option agreement and powers of attorney, as amended from time to time. In addition, in the event that any of them obtains any equity interest in Hangzhou Tuya Technology held by their respective spouses for any reason, such spouse agreed to be bound by similar obligations and agreed to enter into similar contractual arrangements. Each signing spouse undertook that in the event of death, bankruptcy, incapacity, divorce of her spouse, or any circumstance that may affect the exercise of his shareholder rights in Hangzhou Tuya Technology, the signing spouse will not, under any circumstances and in any way, take any action that may affect or hinder the obligations of her spouse under the above contractual arrangements.

4.D. Property, Plant and Equipment

Our principal executive office is located in Hangzhou, China under a lease that will expire in 2026. In addition, we operate internationally with local headquarters in the U.S., India, Germany, and Japan. As of December 31, 2021, we leased 21 properties with a gross floor area of approximately 38,278.22 square meters in China. These offices are leased, and we do not own any real property. We believe that our current facilities are adequate to meet our current needs.

ITEM 4A. UNRESOLVED STAFF COMMENTS

None.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

You should read the following discussion together with our consolidated financial statements and the related notes included elsewhere in this annual report. This discussion contains forward-looking statements about our business and operations. Our actual results may differ materially from those we currently anticipate as a result of many factors, including those we describe under "Item 3. Key Information—3.D. Risk Factors" and elsewhere in this annual report.

The following includes discussion of certain of our key performance metrics for the periods indicated. See Introduction in this annual report for the definition of these metrics and a description of how they are calculated.

5.A. Operating Results

KEY FACTORS AFFECTING OUR RESULTS OF OPERATIONS

Our results of operations and financial condition are affected by the general factors driving the global IoT industry, including, among others, economic growth of major economies, the increase in per capita disposable income, consumer demand for smart devices, stability of the global supply chain, any global epidemics, new and innovative technologies, competition, and government regulations. Unfavorable changes in any of these general industry conditions could negatively affect demand for our products and services and materially and adversely affect our results of operations.

In addition, we believe our results of operations are primarily and more directly affected by the following specific factors:

Market Adoption of IoT Cloud Development Platform

Our future success depends in large part on the market adoption of IoT cloud development platforms which, in turn, is driven by the proliferation of smart devices. As technologies advance, businesses and end users increasingly demand superior software experience, driving IoT adoption to an inflection point. However, brands and developers still face certain challenges, such as cost and complexity associated with developing an integrated IoT cloud development platform. We see growing demand for our platform because we are in a unique position to deliver a one-stop, developer-first, cloud-agnostic IoT platform with broad use cases that allows our customers to digitalize their businesses and transform the experience of their end users. We believe that the benefits offered by our platform put us in a strong position to capture significant market opportunities ahead.

Expanding Usage by Existing Customers

We have amassed a large and diversified customer base covering a wide spectrum of verticals. We believe that there are significant growth opportunities within our existing customers. As our platform is built to be product- and brand-agnostic, many customers using our IoT cloud development platform for one product category expand to more brands, categories and use cases in order to maximize the benefits of our platform and ensure consistent, high quality IoT experience for their end users. Through the increase in usage, we grow more brands and OEMs on our platform into larger customers, such as premium customers who contribute more than US$100,000 of revenues during the immediately preceeding 12-month period. As this trend continues, our brand awareness also increases, generating word-of-mouth referrals that not only attract more brands, developers and partners, but also lead to growing end user demand, better user insights and a more vibrant IoT ecosystem. We expect to expand into additional product categories and use cases to expand cross- and up-selling opportunities and continue to invest in sales and marketing and customer success activities to achieve additional revenue growth from existing customers. We believe that these efforts will have a long-term, positive impact on our business and results of operations.

New Customer Acquisition

Our operating results and growth prospects will also depend on our ability to attract new customers. We are intensely focused on growing our customer base. We continue to invest in our sales and marketing efforts and developer community outreach, which are critical to driving customer acquisition. We have built a developer and partner network through effective marketing efforts which continuously raise awareness of our IoT cloud development platform. For example, through our self-service developer portal, a developer can use our platform to develop a smart device within minutes. This has allowed us to acquire customers rapidly and cost-effectively. Furthermore, we seek to improve the breadth and quality of our platform and products, and to enhance our brand recognition, which will allow us to capture additional market share, better optimize the pricing of our products and services, and reach customers in a broader range of verticals and use cases.

Investment for Growth

We are committed to delivering industry-leading products to continue building and maintaining credibility with the global IoT community. We believe that the comprehensive product offerings and our continued efforts to introduce new features and capabilities on our platform provide us with a significant competitive advantage. We will continue to enhance our platform by expanding functions of existing products, developing new products, and delving into more verticals and use cases to support the growth of our business, and to invest heavily in our technological capabilities and marketing activities to maintain our strong position in the developer community.

Seasonality

We have in the past experienced, and expect in the future to continue to experience, seasonal fluctuations in our revenues from time to time, with the fourth quarter historically being our strongest quarter for sales to new and existing customers, as a result of the holiday season and customers' buying patterns. We have experienced lower growth in revenues in the first quarter as a result the reduced output of OEM customers located in China due to the Lunar New Year holidays. As an illustration of such seasonality, we had approximately 3,000 customers who generated revenues ("revenue-generating customers") in the first quarter of 2021, decreasing from approximately 3,400 revenue-generating customers in the fourth quarter of 2020. Our revenue-generating customers then increased to approximately 3,700 in the second quarter of 2021. We expect the historical seasonality trends to continue to impact our results of operations and financial condition.

Revenue Mix

Our products and services primarily consist of IoT PaaS, smart device distribution, Industry SaaS and cloud-based value-added services. Our results of operations are affected by our product mix, as different products have a range of different margins and profitability profiles. For example, an increase in the revenue contribution from Industry SaaS, which typically has a higher margin than IoT PaaS or smart device distribution, generally leads to an increase in our overall profit margin. Our product mix may shift over time due to a variety of factors, including customer demands and preferences, competition, our ability to maintain and expand customer relationships, our ability to forecast market and technology trends, and our sales and marketing efforts. We continuously monitor our revenue mix and seek to increase revenue contribution from products and use cases with attractive margin profiles.

Effective Cost and Expense Control

Our results of operations are affected by our ability to control our costs and operating expenses. Since a significant portion of our costs relates to the modules and cloud infrastructure services from third parties, our cost control depends significantly on our ability to estimate customer demand properly in order to inform our procurement decisions. With respect of product development, we intend to optimize our costs and operating expenses by achieving increasing economies of scale and improved cost-efficiency as we continue to invest in R&D. With respect to sales and marketing expenses, we expect to continue to benefit increasingly from the network effect of our enhanced brand awareness. We also intend to optimize our administrative expenses by enhancing our level of management, streamlining our internal workflows, and leveraging technology to drive convenience, cost-efficiency and productivity.

Effect of Currency Translation

We currently derive the majority of our revenues from IoT PaaS generated primarily through our contracts with OEMs located in the PRC. These revenues are predominantly denominated in RMB. We operate internationally with local offices in the U.S., India, Germany, and Japan, among other locations, and expect that our international activities will continue to grow over the foreseeable future as we pursue opportunities in existing and new markets. Our reporting and functional currency is the U.S. dollar. The financial statements of our subsidiaries and consolidated affiliated entities using functional currencies other than the U.S. dollar, such as RMB, are translated to the U.S. dollar. As a result, as RMB or other currencies in which we generate revenues depreciate or appreciate against the U.S. dollar, our revenues presented in U.S. dollars will be negatively or positively affected. See "Item 11. Quantitative and Qualitative Disclosure about Market Risk—Foreign exchange risk."

KEY OPERATING METRICS

We manage our business using the following key operating metrics. We use these metrics to assess the progress of our business, make decisions on how to allocate capital, time and technology investments.

	For the year ended December 31,		
	2019	**2020**	**2021**
Number of IoT PaaS customers	2,328	3,296	5,527

	For the trailing 12-month period ended December 31,		
	2019	**2020**	**2021**
Number of premium IoT PaaS customers	127	188	311

	For the trailing 12-month period ended								
	December 31, 2019	**March 31, 2020**	**June 30, 2020**	**September 30, 2020**	**December 31, 2020**	**March 31, 2021**	**June 30, 2021**	**September 30, 2021**	**December 31, 2021**
Dollar-based net expansion rate for IoT PaaS	188 %	173 %	160 %	179 %	181 %	210 %	211 %	179 %	153 %

Number of IoT PaaS Customers

Our ability to grow the number of IoT PaaS customers is a key indicator of our business and future growth opportunities. We define an IoT PaaS customer for a given period as a customer who has directly placed at least one order for IoT PaaS with us during that period. While we serve both brands and OEMs, it is typically the OEMs, instead of brands, who directly place orders with us for IoT PaaS.

Number of Premium IoT PaaS Customers

While we continue to grow IoT PaaS customers across all sizes, over time, we focus on growing the number of our premium customers to scale our business. We define a premium IoT PaaS customer as a customer as of a given date that contributed more than US$100,000 of revenues during the immediately preceding 12-month period.

Dollar-based Net Expansion Rate for IoT PaaS

Our ability to maintain long-term revenue growth depends on our ability to increase customers' usage of our platform over time and grow revenues generated from existing customers. An important way for us to track our performance in this area is by measuring dollar-based net expansion rate for our IoT PaaS. To calculate the dollar-based net expansion rate for IoT PaaS for the current period, we first specify a measurement period consisting of the trailing two years from the current period end. Next, we define as our "cohort" the population of IoT PaaS customers for the first year of the measurement period (i.e. those who have placed at least one order for IoT PaaS during that year). We then calculate the dollar-based net expansion rate as the quotient obtained by dividing the IoT PaaS revenues from this cohort in the second year of the measurement period by the IoT PaaS revenues from the same cohort in the first year of such measurement period. The dollar-based net expansion rate for our IoT PaaS is affected by customers' purchase cycles, which could fluctuate from time to time within a year, as well as a number of other factors including but not limited to new product introductions, customer mix, promotional activities, and the variable timing and amount of customer purchases. As a result, the dollar-based net expansion rate for our IoT PaaS for the trailing 12-month period ended the last day of each quarter is an inherently volatile metric. Our dollar-based net expansion rate for IoT PaaS has remained higher than 150% for nine consecutive quarters since we began tracking this metric for the trailing 12-month period ended December 31, 2019. Our dollar-based net expansion rate demonstrates our strong ability to continue to expand customers' usage of our platform over time and grow revenues generated from existing customers.

As a result of the impacts of COVID-19, such as reduced or halted production of OEMs, global supply chain challenges, and our reduced marketing spend due to travel restrictions, the dollar-based net expansion rate for our IoT PaaS decreased from 188% for the trailing 12-month period ended December 31, 2019 to 173% for the trailing 12-month period ended March 31, 2020 and further to 160% for the trailing 12-month period ended June 30, 2020. The dollar-based net expansion rate for our IoT PaaS decreased from 211% for the trailing 12-month period ended June 30, 2021 to 179% for the trailing 12-month period ended September 30, 2021, and further to 153% for the trailing 12-month period ended December 31, 2021, primarily because our customers became more prudent in their purchases in light of the continued global inflations which weakened the purchase power of end users.

IMPACT OF COVID-19

The COVID-19 pandemic, including the recent emergence of the Omicron variant globally, has caused temporary disruption to our business operations. For example, in the first quarter of 2020, we experienced a decline in demand for IoT PaaS due to reduced production capacity of OEMs as COVID-19 containment measures were widely introduced across China, where substantially all of them were located, which adversely affected our results of operations in that quarter. The pandemic has also caused significant logistical challenges to the global supply chains, resulting in disrupted shipping lanes, labor and material shortage and weakened consumer demand for smart devices, all of which have negatively impacted our business and results of operations. Additionally, the travel restrictions and social distancing guidelines imposed by governments globally have reduced international travels and in-person meetings, which in turn limited our ability to engage in in-person marketing with brands, particularly those brands based in the U.S. and Europe. There remains significant uncertainties associated with the COVID-19 pandemic, including with respect to the ultimate spread of the virus, the severity of the disease, the duration of the pandemic and further actions that may be taken by government authorities around the world to contain the virus or to treat its impact, and the full extent to which the COVID-19 pandemic will directly or indirectly impact our business, results of operations, cash flows and financial condition will depend on future developments that are highly uncertain and cannot be accurately predicted. See “Item 3. Key Information—3.D.Risk Factors—Risks Related to Our Business and Industry—The COVID-19 pandemic has disrupted our and our business partners’ operations and it, or any future health epidemic or other adverse public health developments, may continue to do so.” As of the date of this annual report, we have received various COVID-19 related government support and subsidies. These government support and subsidies include a reduction granted by the PRC government of approximately RMB36.4 million in our contributions to our employees’ social security scheme and subsidies of approximately US$0.1 million provided to our U.S. and Hong Kong subsidiaries by the respective local governments.

Despite its temporary impacts on our business and results of operations, we believe COVID-19 has brought positive changes for the IoT sector in the long term. The value of software-enabled IoT experience and the connectivity, convenience and efficiency that it enables is heightened throughout the pandemic. People’s interactions with IoT devices have increased as they continue to work, learn, and play from home. Businesses and organizations are increasingly relying on IoT technologies to perform tasks that can be no longer handled manually due to COVID-19 related restrictions and closures. We expect this trend to continue post-pandemic, driving demand for quality IoT products and services in the long run. To capture this growth opportunity, we intend to continue to invest in growing our customer, developer and partner bases, broadening our product offerings, and expanding our brand awareness.

BASIS OF PREPARATION

Our consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“US GAAP”). Principal accounting policies followed by us in the preparation of the accompanying consolidated financial statements are summarized below.

CRITICAL ACCOUNTING POLICIES

For a detailed discussion of our critical accounting policies, see Note 2 to our consolidated financial statements included elsewhere in this annual report.

KEY COMPONENTS OF CONSOLIDATED STATEMENTS OF LOSS

Revenues

We generate revenues from three sources, namely (i) IoT PaaS; (ii) smart device distribution; and (iii) SaaS and others. The following table sets forth a breakdown of our revenues, in absolute amounts and as percentages of total revenues, for the years indicated.

	For the year ended December 31,					
	2019		2020		2021	
	US$	%	US$	%	US$	%
	(in thousands, except for percentages)					
Revenues						
IoT PaaS	76,365	72.2	151,677	84.3	261,360	86.5
Smart device distribution	27,474	26.0	22,071	12.3	22,153	7.3
SaaS and others	1,950	1.8	6,126	3.4	18,563	6.2
Total	**105,789**	**100.0**	**179,874**	**100.0**	**302,076**	**100.0**

We generate IoT PaaS revenues mainly from the fees charged to customers based on the number of IoT PaaS products we deploy. We generate revenues from sales to select customers on an on-demand basis of finished smart devices with IoT PaaS deployed and sourced from qualified OEMs. We strategically position smart device distribution as a way to nurture long-term customer relationship and have historically operated it at a relatively moderate scale. We generate our SaaS and others revenues mainly from (i) the subscription fees charged to customers of Industry SaaS, and (ii) the fees that we receive for certain value-added services we offer to brands and OEMs, such as AI-powered virtual assistants, and cloud-based services we offer directly to end users of Tuya-powered smart devices.

Cost of Revenue

Our cost of revenue consists of the costs directly related to providing our products to our customers. These costs and expenses primarily include (i) material costs, primarily including the costs relating to the modules where the edge capabilities of IoT PaaS are embedded; (ii) third-party cloud infrastructure expenses; (iii) employee-related costs, including payroll of production support personnel; and (iv) others, including estimated warranty costs and inventory write-downs, among other things.

The following table sets forth a breakdown of our costs of revenue by products and services in absolute amounts and as percentages of revenues for the years indicated.

	For the year ended December 31,					
	2019		2020		2021	
	US$	% of Revenues	US$	% of Revenues	US$	% of Revenues
	(in thousands, except for percentages)					
Cost of revenue						
IoT PaaS	54,443	51.5	97,244	54.1	150,486	49.8
Smart device distribution	23,088	21.8	19,198	10.7	18,849	6.3
SaaS and others	472	0.4	1,495	0.8	4,874	1.6
Total	**78,003**	**73.7**	**117,937**	**65.6**	**174,209**	**57.7**

Our cost of revenue has been and will continue to be affected by a number of factors, including economies of scale, improved efficiency achieved through effective R&D, and product mix, among other things. For the drivers behind the increase in the cost of revenue, see "– Discussion of Results of Operations."

Gross Profit and Gross margin

The following table sets forth a breakdown of our gross profit and gross margins for the years indicated.

	For the year ended December 31,					
	2019		2020		2021	
	Gross profit	Gross margin	Gross profit	Gross margin	Gross profit	Gross margin
	US$	%	US$	%	US$	%
	(in thousands, except for percentages)					
Gross profit and gross margin						
IoT PaaS	21,922	28.7	54,433	35.9	110,874	42.4
Smart device distribution	4,386	16.0	2,873	13.0	3,304	14.9
SaaS and others	1,478	75.8	4,631	75.6	13,689	73.7
Total	**27,786**	**26.3**	**61,937**	**34.4**	**127,867**	**42.3**

Our gross margin has been and will continue to be affected by a number of factors, including economies of scale, improved efficiency achieved through effective R&D, and product mix, among other things. From 2019 to 2021, the gross margin of IoT PaaS has continued to increase, primarily due to (i) our increased economies of scale and cost savings as our business continued to grow, (ii) improved efficiency relating to IoT PaaS deployment achieved through effective R&D; and (iii) the expansion of our product mix to include more device categories that have relatively high profit margins. The changes in the gross margin of smart device distribution from 2019 to 2021 were mainly due to normal fluctuations caused by different customer mix, as margin profiles vary across our smart device customers, and variable timing and amount of customer purchases from period to period. The changes in the gross margin of SaaS and others from 2019 to 2021 were due to normal fluctuations caused by changes in product mix.

From 2019 to 2021, the gross margin of SaaS and others has been consistently higher than that of IoT PaaS, primarily due to the difference in cost structure. The cost of revenue of SaaS and others consist mainly of employee costs and costs of software services (e.g. cloud infrastructure), while a substantial portion of the costs of revenue of IoT PaaS and smart device distribution relates to the more costly hardware, such as chips for IoT PaaS business and finished smart devices for our smart device distribution business. For the drivers behind the increase in the gross margins of IoT PaaS and other related details, see "—Discussion of Results of Operations."

Research and Development Expenses

Research and development expenses consist primarily of (i) employee-related costs, including salaries, benefits and bonuses, for our research and development personnel; (ii) share-based compensation; (iii) cloud infrastructure cost; (iv) rental and utilities; and (v) other expenses associated with our research and development activities.

Sales and Marketing Expenses

Sales and marketing expenses consist primarily of (i) employee-related costs, including salaries, bonuses and benefits, for our employees responsible for business development, branding and marketing; (ii) share-based compensation; (iii) marketing costs related to our developer conferences and events; and (iv) other sales and marketing expenses, including those spent on content and social media marketing.

General and Administrative Expenses

Our general and administrative expenses consist of (i) employee-related costs, including salaries, bonuses, and benefits paid to general and administrative personnel, (ii) share-based compensation, and (iii) other expenses associated with our general and administrative activities.

Other Operating (Expenses)/Incomes, Net

Other operating (expenses)/incomes, net primarily consist of government grants and tax refund.

Other Income/(Loss)

Other income/(loss) primarily consists of other non-operating incomes, net, financial income, net and foreign exchange loss, net.

TAXATION

Cayman Islands

We are incorporated in the Cayman Islands. The Cayman Islands currently levies no taxes on individuals or corporations based upon profits, income, gains or appreciation and there is no taxation in the nature of inheritance tax or estate duty. There are no other taxes likely to be material to us levied by the government of the Cayman Islands except for stamp duties which may be applicable on instruments executed in, or after execution, brought within the jurisdiction of the Cayman Islands. In addition, the Cayman Islands does not impose withholding tax on dividend payments.

Hong Kong

Our subsidiaries in Hong Kong, including Tuya (HK) Limited, our wholly-owned subsidiary, are subject to Hong Kong profits tax on their activities conducted in Hong Kong at a uniform tax rate of 16.5%. Under Hong Kong tax law, our subsidiaries in Hong Kong are exempted from income tax on their qualified foreign-derived income and there is no withholding tax in Hong Kong on remittance of dividends. No provision for Hong Kong profits tax was made as we had no estimated taxable income that was subject to Hong Kong profits tax during 2019, 2020 and 2021.

PRC

Our subsidiaries and consolidated VIE in China are companies incorporated under PRC law and, as such, are subject to PRC enterprise income tax on their taxable income in accordance with the relevant PRC income tax laws. Pursuant to the Enterprise Income Tax Law of the People's Republic of China (the "PRC EIT Law"), which was amended on December 29, 2018 and became effective on the same date and the Regulation on the Implementation of the Enterprise Income Tax Law of the People's Republic of China, which was amended on April 23, 2019 and became effective on the same date, a uniform 25% enterprise income tax rate is generally applicable to both foreign-invested enterprises and domestic enterprises, except where a special preferential rate applies. In 2019, 2020 and 2021, preferential tax treatment was available to one of our PRC subsidiaries. Hangzhou Tuya Information Technology Co., Ltd was recognized as a high-tech enterprise in November 2018, which allowed it to apply an income tax rate of 15% within the validity period of high-tech enterprise certificate. As of December 31, 2021, the renewal application of Hangzhou Tuya Information Technology Co., Ltd has been completed. Hangzhou Tuya Information Technology Co., Ltd continues qualifying as an high-tech enterprise and is entitled to enjoy the 15% beneficial tax rate for the years ended December 31, 2022, 2023 and 2024. The enterprise income tax is calculated based on the entity's global income as determined under PRC tax laws and accounting standards.

We are subject to VAT on the products sold and services provided. We are also subject to surcharges on VAT payments in accordance with PRC law. The PRC Provisional Regulations on Value-Added Tax were promulgated by the State Council on December 13, 1993, which became effective on January 1, 1994 and were subsequently amended from time to time. The Detailed Rules for the Implementation of the PRC Provisional Regulations on Value-Added Tax (2011 Revision) was promulgated by the MOF on December 25, 1993 and subsequently amended on December 15, 2008 and October 28, 2011. On November 19, 2017, the State Council promulgated the Decisions on Abolishing the PRC Provisional Regulations on Business Tax and Amending the PRC Provisional Regulations on Value-Added Tax. Pursuant to these regulations, rules and decisions, all enterprises and individuals engaged in sale of goods, provision of processing, repair, and replacement services, sales of services, intangible assets, real property, and the importation of goods within the PRC territory are VAT taxpayers. On March 20, 2019, the MOF, the SAT, and the General Administration of Customs jointly issued the Announcement on Relevant Policies on Deepen the Reform of Value-Added Tax. Pursuant to this announcement, the generally applicable VAT rates are simplified as 13%, 9%, 6%, and 0%, which became effective on April 1, 2019, and the VAT rate applicable to the small-scale taxpayers is 3%.

As a Cayman Islands holding company, we may receive dividends from our PRC subsidiaries through Tuya (HK) Limited. The PRC EIT Law and its implementing rules provide that dividends paid by a PRC entity to a nonresident enterprise for income tax purposes is subject to PRC withholding tax at a rate of 10%, and may be subject to reduction by an applicable tax treaty with China. Pursuant to the Arrangement between Mainland China and the Hong Kong Special Administrative Region on the Avoidance of Double Taxation and the Prevention of Fiscal Evasion, which was signed on August 21, 2006, the withholding tax rate in respect to the payment of dividends by a PRC enterprise to a Hong Kong enterprise may be reduced to 5% from a standard rate of 10% if the Hong Kong enterprise (i) directly holds at least 25% of the PRC enterprise, (ii) is a tax resident in Hong Kong and (iii) could be recognized as a Beneficial Owner of the dividend from PRC tax perspective. Pursuant to the Notice of the State Administration of Taxation on the Issues concerning the Application of the Dividend Clauses of Tax Agreements (the "Guoshuihan [2009] 81"), a Hong Kong resident enterprise must meet the following conditions, among others, in order to apply the reduced withholding tax rate: (i) it must be a company; (ii) it must directly own the required percentage of equity interests and voting rights in the PRC resident enterprise; and (iii) it must have directly owned such required percentage in the PRC resident enterprise throughout the 12 months prior to receiving the dividends. In October 2019, the State Administration of Taxation issued Announcement of the State Taxation Administration on Issuing the Measures for Non-resident Taxpayers' Enjoyment of Treaty Benefits (the "SAT Circular 35"), which became effective on January 1, 2020. SAT Circular 35 provides that nonresident enterprises are not required to obtain pre-approval from the relevant tax authority in order to enjoy the reduced withholding tax. Instead, nonresident enterprises and their withholding agents may, by self-assessment and on confirmation that the prescribed criteria to enjoy the tax treaty benefits are met, directly apply the reduced withholding tax rate, and file necessary forms and supporting documents when performing tax filings, which will be subject to post-tax filing examinations by the relevant tax authorities. Accordingly, Tuya (HK) Limited may be able to benefit from the 5% withholding tax rate for the dividends it receives from its PRC subsidiaries, if it satisfies the conditions prescribed under Guoshuihan [2009] 81 and other relevant tax rules and regulations. However, according to Guoshuihan [2009] 81 and SAT Circular 35, if the relevant tax authorities consider the transactions or arrangements we have are for the primary purpose of enjoying a favorable tax treatment, the relevant tax authorities may adjust the favorable withholding tax in the future.

If our holding company in the Cayman Islands or any of our subsidiaries outside of China were deemed to be a "resident enterprise" under the PRC EIT Law, it would be subject to enterprise income tax on its worldwide income at a rate of 25%.

DISCUSSION OF RESULTS OF OPERATIONS

Year Ended December 31, 2021 Compared with Year Ended December 31, 2020

Revenues

Our revenues increased by 67.9% from US$179.9 million for 2020 to US$302.1 million for 2021, primarily driven by increases in our revenues from IoT PaaS and SaaS and others.

- **IoT PaaS**. Our revenues generated from IoT PaaS increased by 72.3% from US$151.7 million for 2020 to US$261.4 million for 2021, mainly driven by increased deployment of IoT PaaS which, in turn, was driven by (i) growth in the SKUs and categories of products supported by IoT PaaS; (ii) increased sales to existing customers as their sale of smart devices continued to grow, particularly to premium IoT PaaS customers; and (iii) acquisition of new customers. Of the increase in revenues generated from IoT PaaS, US$26.2 million was due to sales to existing customers and US$83.5 million was due to sales to new customers. The number of our premium IoT PaaS customers increased from 188 for the trailing 12-month period ended December 31, 2020 to 311 for the trailing 12-month period ended December 31, 2021.

- **Smart device distribution.** Our revenues generated from smart device distribution remained relatively stable at US$22.1 million and US$22.2 million, respectively, in 2020 and 2021.

- **SaaS and others.** Our revenues generated from SaaS and others increased by 203.0% from US$6.1 million for 2020 to US$18.6 million for 2021, primarily driven by (i) an increase in revenues from the Industry SaaS business driven by acquisition of new customers and expanded deployment of Industry SaaS by existing customers, and (ii) an increase in revenues from value-added services, such as app customization services, that we offer to customers.

Cost of revenue

Our cost of revenue increased by 47.7% from US$117.9 million for 2020 to US$174.2 million for 2021, primarily driven by an increase of US$53.2 million in the cost of revenue of IoT PaaS and an increase of US$3.4 million in the cost of revenue of SaaS and others, largely driven by growth in these businesses.

Gross profit and gross margin

As a result of the foregoing, our gross profit increased by 106.4% from US$61.9 million for 2020 to US$127.9 million for 2021. Our overall gross margin increased from 34.4% for 2020 to 42.3% for 2021 primarily due to an increase in the gross margin of IoT PaaS from 35.9% to 42.4%, while the gross margin of smart device distribution and SaaS and others remained relatively stable during these years.

- **IoT PaaS.** The gross profit of IoT PaaS increased by 103.7% from US$54.4 million for 2020 to US$110.9 million for 2021 and the gross margin of IoT PaaS increased from 35.9% for 2020 to 42.4% for 2021, primarily due to (i) our increased economies of scale and cost savings as our business continued to grow, (ii) improved efficiency relating to IoT PaaS deployment achieved through effective R&D, and (iii) the expansion of our product mix to include more device categories that have relatively high profit margin.

- **Smart device distribution.** The gross profit of smart device distribution increased by 15.0% from US$2.9 million for 2020 to US$3.3 million for 2021 and the gross margin of smart device distribution increased from 13.0% for 2020 to 14.9% for 2021 due to normal fluctuations caused by different customer mix, as margin profiles vary across our smart device customers, and variable timing and amount of customer purchases from year to year.

- **SaaS and others.** Our gross profit of SaaS and others increased by 195.6% from US$4.6 million for 2020 to US$13.7 million for 2021 and the gross margin of SaaS and others decreased from 75.6% for 2020 to 73.7% for 2021. The decrease in the gross margin of SaaS and others were due to normal fluctuations caused by changes in the product mix.

Research and development expenses

Our research and development expenses increased by 125.1% from US$77.4 million for 2020 to US$174.3 million for 2021. The increase was mainly attributable to an increase of US$74.9 million in employee-related costs and an increase of US$11.9 million in share-based compensation, both of which were primarily driven by an increase in the number of our research and development employees and an increase in their compensation levels, as we continued to intensify our research and development efforts. As of December 31, 2020 and 2021, we had 1,637 and 2,561 salaried research and development employees, respectively. The increase in our research and development expenses was also driven, to a lesser extent, by an increase in cloud infrastructure cost as we continued to improve our IoT cloud development platform and grow our business.

Sales and marketing expenses

Our sales and marketing expenses increased by 100.7% from US$37.6 million for 2020 to US$75.4 million for 2021. The increase was mainly attributable to an increase of US$18.5 million in employee-related costs and an increase of US$7.3 million in marketing spending, particularly on offline marketing events such as in-person conferences or expositions, which was primarily due to the continued relaxing of COVID-related restrictions in 2021. The increase was also, to a lesser extent, attributable to an increase of US$5.2 million in share-based compensation as we continued to grow our business and increased sales and marketing headcounts. We had 506 and 719 salaried sales and marketing employees, respectively, as of December 31, 2020 and 2021.

General and administrative expenses

Our general and administrative expenses increased by 300.7% from US$17.9 million for 2020 to US$71.6 million for 2021, mainly attributable to (i) a US$39.5 million increase in share-based compensation and a US$5.0 million increase in employee-related costs, and (ii) a US$9.2 million increase in other expenses, including professional service fees as a result of operating as a public company. The increase in share-based compensation and employee-related costs, was due to an increase in the number of our general and administrative employees. We had 115 and 183 salaried general and administrative employees, respectively, as of December 31, 2020 and 2021.

Other operating (expenses)/incomes, net

Our other operating incomes, net, increased significantly from US$1.1 million for 2020 to US$9.8 million for 2021, which was mainly attributable to a significant increase in tax refunds and incentive subsidies granted by the PRC government in 2021.

Other income/(loss)

We generated other income of US$3.1 million and US$8.6 million, respectively, for 2020 and 2021. The increase in other income was mainly due to (i) an increase in financial income, net of US$4.1 million, primarily arising from our investments in short-term wealth-management products and securities of listed companies; and (ii) increased other non-operating incomes, net in the amount of US$2.0 million due to payment received pursuant to certain arrangements between us and our depositary bank.

Income tax expense

We had an income tax expense of US$0.2 million for 2020 and US$0.5 million for 2021, primarily attributable to the increases in the taxable profits of certain of our subsidiaries.

Net loss for the year

As a result of the foregoing, we recorded net loss of US$66.9 million and US$175.4 million, respectively, for 2020 and 2021.

Year Ended December 31, 2020 Compared with Year Ended December 31, 2019

For a detailed description of the comparison of our operating results for the year ended December 31, 2020 to the year ended December 31, 2019, see "Management's Discussion and Analysis of Financial Condition and Results of Operations— 2020 Compared to 2019" beginning on page 101 of our prospectus filed with the Securities and Exchange Commission on February 26, 2021 pursuant to Rule 424(b)(4) under the Securities Act (Securities Act File No. 333-253575).

NON-GAAP FINANCIAL MEASURE

We use adjusted loss for the year, which is a non-GAAP financial measure, in evaluating our operating results and for financial and operational decision-making purposes. We believe that non-GAAP adjusted loss for the year provides useful information about our results of operations and enhances the overall understanding of our past performance and future prospects. We believe that such non-GAAP financial measure facilitates comparisons of operating performance from year to year and company to company by eliminating potential impacts of items that our management does not consider to be indicative of our core operating performance. We believe that non-GAAP financial measure provides useful information to investors in understanding and evaluating our consolidated results of operations in the same manner as it helps our management.

The use of a non-GAAP financial measure has limitations as an analytical tool. Non-GAAP adjusted loss for the year should not be considered in isolation or construed as an alternative to loss from operations, net loss for the year. Investors are encouraged to review non-GAAP adjusted loss for the year and the reconciliation to its most directly comparable U.S. GAAP measure. Non-GAAP adjusted loss for the year presented here may not be comparable to similarly titled measures presented by other companies. Other companies may calculate similarly titled measures differently, limiting their usefulness as comparative measures to our data. We encourage investors and others to review our financial information in its entirety and not rely on a single financial measure.

Non-GAAP adjusted loss for the year represents net loss for the year excluding share-based compensation expenses, which we do not consider to be indicative of our core operating performance. The table below sets forth a reconciliation of our net loss for the year to non-GAAP adjusted loss for the year for the years indicated. Share-based compensation expenses relate to the share-based awards that we grant to employees and directors. We exclude share-based compensation expenses from our non-GAAP financial measure because such expenses can vary significantly from year to year based on our share price, as well as the timing, size and nature of equity awards granted. Our management believes the exclusion of such expenses facilitates the ability of investors to compare our operating results with those of other companies in the industry in which we operate, many of which also exclude share-based compensation expenses in determining their non-GAAP financial measures.

	For the year ended December 31,		
	2019	2020	2021
	(US$in thousands)		
Net loss for the year	(70,477)	(66,912)	(175,424)
Adjustment:			
Share-based compensation expenses	5,220	9,446	66,089
Non-GAAP adjusted loss for the year	**(65,257)**	**(57,466)**	**(109,335)**

We recorded non-GAAP adjusted loss of US$65.3 million, US$57.5 million and US$109.3 million, respectively, in 2019, 2020 and 2021, primarily because we have been focused on expanding our IoT cloud development platform, growing our customer base and fostering our developer community, rather than seeking immediate financial returns or profitability, in order to lay a solid foundation for the long-term growth with our products and services.

5.B. Liquidity and Capital Resources

CASH FLOWS AND WORKNIG CAPITAL

Our principal sources of liquidity have been payments received in our operations, as well as proceeds from private sales of equity securities and our initial public offering.

As of December 31, 2021, we had US$1,066.1 million in cash and cash equivalents and short-term investments. As of December 31, 2021, cash and cash equivalents of total equivalent to US$89.2 million were held by our subsidiaries in the PRC; cash and cash equivalents, mainly denominated in U.S. dollars, of total equivalent to US$948.2 million were held by our subsidiaries in Hong Kong; and the cash and cash equivalents, mainly denominated in U.S. dollars, EUR, and Japanese Yen, of total equivalent to US$28.7 million were held by Tuya Inc. and its other overseas subsidiaries. Our cash and cash equivalents and short-term investments consist of bank deposits and investments in short-term wealth management products offered by financial institutions in the PRC, most of which have original maturities of three months or less when purchased. We believe that our current cash and cash equivalents, balance of short-term investments and anticipated cash flows from operations will be sufficient to meet our anticipated cash needs, including cash needs for working capital and capital expenditures, for at least the next 12 months.

We intend to finance our future working capital requirements and capital expenditures primarily from cash expected to be generated from operating activities and funds raised from financing activities, including the net proceeds we have received from our initial public offering. We may not be able to obtain additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth, scale our infrastructure, develop product enhancements and to respond to business challenges could be significantly impaired, and our business, operating results and financial condition may be adversely affected. See "Item 3. Key Information—3.D. Risk Factors—Risk Related to Our Business and Industry—We may require additional capital to support our business and response to business opportunities, and this capital might not be available on favorable terms, if at all."

Additionally, historically we have not been profitable or generated positive operating cash flows. We generated net loss of US$66.9 million and US$175.4 million in 2020 and 2021, respectively. We recorded net cash operating outflows of US$49.2 million and US$126.1 million in 2020 and 2021, respectively. If we are unable to achieve and sustain profitability, or if we continue to experience net cash operating outflows in the future, our business, liquidity, financial condition and results of operations may be materially and adversely affected. See "Item 3. Key Information—3.D. Risk Factors—Risks Related to Our Business and Our Industry—We have a history of net loss and net cash operating outflow and may not be able to achieve or sustain profitability in the future."

The following table presents our consolidated cash flow data for the years presented.

	For the year ended December 31,		
	2019	2020	2021
	(US$ in thousands)		
Net cash used in operating activities	(56,563)	(49,211)	(126,103)
Net cash generated from/(used in) investing activities	8,491	(7,852)	(112,957)
Net cash generated from/(used in) financing activities	174,230	(172)	1,041,802
Effect of exchange rate changes on cash and cash equivalents, restricted cash[(1)]	(481)	2,903	2,879
Net increase/(decrease) in cash and cash equivalents, restricted cash[(1)]	125,677	(54,332)	805,621
Cash and cash equivalents, restricted cash[(1)] at the beginning of the year	87,610	213,287	158,955
Cash and cash equivalents, restricted cash[(1)] at the end of the year	213,287	158,955	964,576

Note:

(1) Restricted cash represents cash that cannot be withdrawn without the permission of third parties. Our restricted cash is substantially cash balance on deposit required by our business partners and commercial banks. The restricted cash balance for the year ended December 31, 2020 related to cash preservation for an ongoing dispute between us and one of our customers in associated with smart devices sold to this customer. Such restricted cash was released from restriction in February 2021 due to the settlement reached ebetween us and such customer. The restricted cash balance for the year ended December 31, 2021 related to deposits for foreign currency forward contracts, and were subsequently released from the restriction in January 2022.

Net Cash Used in Operating Activities

Net cash used in operating activities was US$126.1 million in 2021. The difference between our net loss of US$175.4 million and the net cash used in operating activities was mainly due to (i) share-based compensation of US$66.1 million primarily driven by our increased headcounts, (ii) an increase in accruals and other payables of US$19.1 million, largely driven by our overall business growth, (iii) amortization of right-of-use assets of US$7.0 million, and (iv) an increase in deferred revenue of US$5.9 million, driven by the rapid growth in our IoT PaaS and Industry SaaS as well as the increased number of IoT PaaS customers enrolled in our membership programs, partially offset by (i) an increase in inventories of US$22.1 million, and (ii) an increase in accounts receivable of US$23.4 million, both of which are largely driven by our business and customer base expansion.

Net cash used in operating activities was US$49.2 million in 2020. The difference between our net loss of US$66.9 million and the net cash used in operating activities was mainly due to (i) an increase in advance from customers of US$13.0 million which was largely driven by our overall business growth and increased number of customers, (ii) an increase in accruals and other payables of US$11.9 million, (iii) an increase in accounts payables of US$11.0 million due to increased payables to our suppliers which, in turn, was largely driven by our overall business growth, and (iv) share-based compensation of US$9.4 million, partially offset by (i) an increase in inventories of US$19.8 million as we strategically increased our inventory to support the growth of our IoT PaaS business, (ii) an increase in notes receivable of US$8.7 million due to increased customer payments in the form of bank acceptance notes, driven by our overall business and customer base expansion; and (iii) an increase in accounts receivable of US$7.2 million, driven by our overall business growth and increased number of customers.

Net cash used in operating activities was US$56.6 million in 2019. The difference between our net loss of US$70.5 million and the net cash used in operating activities was mainly due to (i) an increase in accruals and other payables of US$11.8 million, (ii) an increase in accounts payable of US$7.5 million, (iii) share-based compensation of US$5.2 million, and (iv) an increase in amortization of right-of use assets of US$2.6 million, partially offset by (i) an increase in inventories of US$11.0 million, (ii) an increase in accounts receivable of US$4.0 million and (iii) a decrease in operating lease liabilities of US$2.3 million. The foregoing increases in accounts payable, inventories, and accounts receivable were primarily driven by our overall business growth in 2019.

Net Cash (Used in)/Generated from Investing Activities

Net cash used in investing activities was US$113.0 million in 2021, which was primarily attributable to (i) payment for short-term investments of US$468.7 million, (ii) payment for long-term investments of US$21.3 million, (iii) purchase of property, equipment and software of US$6.2 million and (iv) provision of bridge loans of US$2.9 million, partially offset by proceeds from disposal of short-term investments of US$385.5 million. Our short-term investments mainly include time deposits and wealth management products offered by banks or other financial institutions in the PRC.

Net cash used in investing activities was US$7.9 million in 2020, which was primarily attributable to payment for short-term investments of US$196.8 million, partially offset by (i) proceeds from disposal of short-term investments of US$192.5 million and (ii) proceeds from disposal of a long-term investment of US$0.2 million.

Net cash generated from investing activities was US$8.5 million in 2019, which was primarily attributable to (i) proceeds from disposal of short-term investments of US$281.5 million and (ii) proceeds from disposal of property, equipment and software of US$5.0 thousand, partially offset by (i) payment for short-term investments of US$270.4 million, (ii) purchase of property, equipment and software of US$2.5 million and (iii) payment for long-term investments of US$0.1 million.

Net Cash Generated from/(Used in) Financing Activities

Net cash generated from financing activities in 2021 was US$1,041.8 million, which was due to (i) net proceeds from our initial public offering on the NYSE completed in March 2021 and related over-allotment option of US$904.7 million, (ii) proceeds from issuance of ordinary shares prior to our initial public offering on the NYSE of US$200.0 million, and (iii) proceeds from exercise of share options of US$1.1 million, partially offset by payment for repurchase of ordinary shares of US$64.0 million.

Net cash used in financing activities in 2020 was US$0.2 million, which was due to payments of deferred offering costs of US$ 0.2 million, partially offset by subscription contributions from shareholders of US$0.01 million.

Net cash generated from financing activities in 2019 was US$174.2 million, which was primarily attributable to the net proceeds from issuance of Series D convertible preferred shares to investors in September and November 2019 of US$178.0 million, partially offset by a payment for repurchase of convertible preferred shares of US$3.8 million.

MATERIAL CASH REQUIREMENTS

Our material cash requirements as of December 31, 2021 and any subsequent interim period include primarily our working capital and operating expenditure needs, capital expenditures, services purchase commitments and operating lease commitments.

Other than the capital expenditures, services purchase commitments and operating lease commitments as discussed below, we did not have any significant capital and other commitments, long-term obligations or guarantees as of December 31, 2021. We did not have future minimum capital commitments as of December 31, 2020 and 2021.

Capital Exenditures

Our capital expenditures are incurred primarily in connection with purchase of property, equipment and software. Our capital expenditures were US$2.5 million, US$3.2 million and US$ 6.2 million, respectively, in 2019, 2020 and 2021. We intend to fund our future capital expenditures with our existing cash balance and proceeds from our initial public offering.

Operating lease commitments

We had outstanding commitments on several non-cancellable operating lease agreements. Operating lease commitment within one year or less lease term as of December 31, 2020 and 2021 were US$0.05 million and US$0.1 million, respectively. We have elected not to recognize these operating lease commitment any lease liability or right-of-use asset, therefore they are not yet reflected in the consolidated financial statements.

Services purchase commitments

As of December 31, 2021, our services purchase commitments were as follows:

	Total	Less Than 1 year	1-3 years	3-5 years
		(US$ in thousands)		
Purchase obligations[(1)]	31,771	6,146	15,000	10,625

Note:

(1) Purchase obligations represent US$31.8 million of remaining non-cancelable contractual commitments as of December 31, 2021, related to one of our third-party cloud infrastructure agreement, under which we committed to spend at least US$37.5 million between June 1, 2021 and May 31, 2026 with minimum purchase commitment during any year. We had made payments totaling US$5.7 million under this agreement as of December 31, 2021.

HOLDING COMPANY STRUCTURE

Tuya Inc. is a holding company with no material operations of its own. We conduct our operations mainly through our PRC and other international subsidiaries. As a result, our ability to pay dividends depends upon dividends paid by our subsidiaries. If our subsidiaries incur debt on their own behalf in the future, the instruments governing their debt may restrict their ability to pay dividends to us.

In addition, our subsidiaries in China are permitted to pay dividends to us only out of their retained earnings, if any, as determined in accordance with the Accounting Standards for Business Enterprise as promulgated by the Ministry of Finance of the PRC, or PRC GAAP. Pursuant to the law applicable to China's foreign investment enterprise, our subsidiaries that are foreign investment enterprise in the PRC have to make appropriation from their after-tax profit, as determined under PRC GAAP, to reserve funds including (i) general reserve fund, (ii) enterprise expansion fund and (iii) staff bonus and welfare fund. The appropriation to the general reserve fund must be at least 10% of the after-tax profits calculated in accordance with PRC GAAP. Appropriation is not required if the reserve fund has reached 50% of the registered capital of our subsidiary. Appropriation to the other two reserve funds are at our subsidiary's discretion. In accordance with the Company Law, the VIE in China must make appropriations from their after-tax profit to non-distributable reserve funds including (i) statutory surplus fund and (ii) discretionary surplus fund. The appropriation to the statutory surplus fund must be at least 10% of the after-tax profits calculated in accordance with PRC GAAP. Appropriation is not required if the statutory surplus fund has reached 50% of the registered capital of our consolidated VIE. Appropriation to discretionary surplus fund is made at the discretion of our consolidated VIE.

We are permitted under PRC laws and regulations to provide funding to our PRC subsidiaries in China through capital contributions or loans, subject to the approval of government authorities and limits on the amount of capital contributions and loans. In addition, our subsidiaries in China may provide RMB funding to our consolidated VIE only through entrusted loans.

5.C. Research and Development, Patents and Licenses, etc.

Our IoT cloud development platform and proprietary cutting-edge IoT technologies have been primarily developed in-house. See "Item 4. Information on the Company—4.B. Business Overview—Research & Development."

5.D. Trend Information

Other than as disclosed elsewhere in this annual report, we are not aware of any trends, uncertainties, demands, commitments or events for the year ended December 31, 2021 that are reasonably likely to have a material and adverse effect on our net revenues, income, profitability, liquidity or capital resources, or that would cause the disclosed financial information to be not necessarily indicative of future results of operations or financial condition.

5.E. Critical Accounting Estimates

Our consolidated financial statements have been prepared in accordance with U.S. GAAP, which requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, revenues and expenses, and related disclosures of contingent liabilities in the consolidated financial statements and accompanying notes. Our estimates are based on historical experience and various assumptions that we believe to be reasonable under the circumstances. Given that changes in circumstances, facts and experience may cause us to revise our estimates, actual results could differ materially from those estimates. Our critical accounting estimates are described below. See Note 2 to our consolidated financial statements for the year ended December 31, 2021 for more information on our critical accounting policies.

Valuation of share-based compensation

We grant restricted shares to Xueji Wang and four other key members of management (collectively "Registered Shareholders"), share options and restricted share units to eligible employees and non-employees. We account for these share-based awards in accordance with ASC 718 Compensation — Stock Compensation.

The Registered Shareholders and employees' share-based awards are measured at the grant date fair value of the awards and recognized as expenses using a straight-line method over the requisite service period, which is the vesting period. For share-based awards granted with only service conditions to its PRC employees, we allow accelerated full vesting upon occurrence of a "change in control" (as defined in our equity incentive plan), cumulative share-based compensation expenses for the share-based awards should be recorded upon the completion of such change in control.

For non-employees' share-based awards, we adopted ASU 2018-07 "Improvements to Nonemployee Share-Based Payment Accounting" for the periods presented. In accordance with ASU 2018-07, it clarifies that equity-classified non-employee share-based awards are measured at the grant date. The definition of the term grant date is amended to generally state the date at which a grantor and a grantee reach a mutual understanding of the key terms and conditions of a share-based payment award. Non-employee share-based awards are measured at the grant date fair value of the awards and recognized as expenses using a straight-line method over the requisite service period, which is the vesting period.

All transactions in which goods or services are received in exchange for equity instruments are accounted for based on the fair value of the consideration received or the fair value of the equity instrument issued, whichever is more reliably measurable.

The binomial option-pricing model is used to measure the value of share options. The determination of the fair value is affected by the fair value of the ordinary shares as well as assumptions regarding a number of complex and subjective variables, including the expected share price volatility, actual and projected employee and nonemployee share option exercise behavior, risk-free interest rates and expected dividend yield. Binomial option-pricing model incorporates the assumptions about grantees' future exercise patterns. The fair value of these awards was determined by management with the assistance from an independent valuation firm using management's estimates and assumptions.

The assumptions used in share-based compensation expense recognition represent management's best estimates, but these estimates involve inherent uncertainties and application of management judgment. If factors change or different assumptions are used, the share-based compensation expenses could be materially different for any period. Moreover, the estimates of fair value of the awards are not intended to predict actual future events or the value that ultimately will be realized by grantees who receive share-based awards. In accordance with ASU 2016-09, we made an entity-wide accounting policy election to account for forfeitures when they occur.

The expected volatility at the grant date and each option valuation date was estimated based on the annualized standard deviation of the daily return embedded in historical share prices of comparable peer companies with a time horizon equal to the expected expiry of the term of the options. We have not declared or paid any cash dividends on our capital stock, and we do not anticipate any dividend payments in the foreseeable future. Expected term is the contract life of the options. We estimated the risk-free interest rate based on the yield to maturity of U.S. treasury bonds denominated in US dollars at the option valuation date.

For the purpose of determining the estimated fair value of our share options, we believe 1) the expected volatility and 2) the estimated fair value of our ordinary shares prior to our initial public offering on March 18, 2021, are the most critical assumptions. Changes in these assumptions could significantly affect the fair value of share options and hence the amount of stock-based compensation we recognize in our consolidated financial statements. Since we did not have a trading history for our shares sufficient to calculate our own historical volatility, the expected volatility of our future ordinary share price was estimated based on the price volatility of the shares of comparable public companies that operate in the same or similar business.

Valuation of ordinary shares

Prior to our initial public offering, we were a private company with no quoted market prices for our ordinary shares. We therefore needed to make estimates of financial forecast at various dates for the purpose of determining the fair value of our ordinary shares at the date of the grant of share-based compensation awards to our employees as one of the inputs into determining the grant date fair value of the option.

The option-pricing method was used to allocate equity value of our company to preferred and ordinary shares, taking into account the guidance prescribed by the AICPA Audit and Accounting Practice Aid. This method requires making estimates of the anticipated timing of a potential liquidity event, such as a sale of our company or an initial public offering and estimates of the volatility of our equity securities. The anticipated timing is based on the plans of our board and management. The other major assumptions used in calculating the fair value of ordinary shares include weighted average cost of capital, or WACC, comparable companies, discount for lack of marketability, or DLOM.

The determination of the equity value requires complex and subjective judgments to be made regarding prospects of the industry and the products at the valuation date, our projected financial and operating results, our unique business risks and the liquidity of our shares.

Upon the completion of our initial public offering, it is no longer necessary for us to estimate the fair value of our ordinary shares in connection with our accounting for granted share options.

Stand-alone selling prices (SSP) for the distinct performance obligation of cloud-based connectivity and basic IoT services

We account for revenue in accordance with Accounting Standards Codification (ASC) Topic 606, Revenue From Contracts With Customers (ASC 606) for all periods presented. For the revenue from IoT PaaS, we determine there are two distinct performance obligations in the delivery of IoT PaaS products including: (1) IoT PaaS products with edge capabilities, app development and device optimization solutions, and; (2) cloud-based connectivity and basic IoT services provided to customers and end consumers. We allocate the transaction price to each performance obligation based on their relative standalone selling price. For the revenue from smart device distribution, we determine that there are two distinct performance obligations for our smart device distribution including the (1) smart devices embedded with IoT PaaS; and (2) cloud-based connectivity and basic IoT services. The transaction price allocation and revenue recognition are the same as the revenue from IoT PaaS.

The standalone selling price for IoT PaaS products is estimated based on the competitor's pricing for similar products in the market, adjusted for entity-specific factors. As the standalone selling price of the cloud-based connectivity and basic IoT services is not directly observable, it is estimated by us by using an expected cost plus a margin approach.

Key areas of judgment include the selection of relevant cloud and other costs necessary to satisfy the performance obligation and estimated profit margins. Based on our historical information, activation occurs, on average, an estimated 6 months after the IoT PaaS products are delivered to customers. The length of life cycle of the IoT PaaS products is estimated based on the historical data in previous years and by referencing the life cycle of different smart devices (e.g. lighting, security and monitoring devices) which ranged from 1.5 to 2 years.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

6.A. Directors and Senior Management

The following table sets forth the name, age and position of each of our directors and executive officers as of the date of this annual report.

Directors and Executive Officers	Age	Position/Title
Xueji (Jerry) Wang	39	Director, Founder, Chief Executive Officer
Liaohan (Leo) Chen	39	Director, Founder, President
Yi (Alex) Yang	40	Director, Co-founder, Chief Operation Officer
Yao (Jessie) Liu	46	Director, Senior Vice President, Chief Financial Officer
Ruixin Zhou	39	Co-founder, Chief Technology Officer
Scott David Sandell	57	Independent Director
Carmen I-Hua Chang	74	Independent Director
Jeff R. Immelt	66	Director
Qing Gao	50	Independent Director
Jing Hong	48	Independent Director

Xueji (Jerry) Wang founded Tuya in 2014 and currently serves as a director and our chief executive officer. Mr. Wang is responsible for the overall strategies, management, corporate culture, and commercial suitability and sustainability of products of Tuya. Mr. Wang has over seven years of experience in IoT industry and about 18 years of experience focusing on software technology, including over 11 years of experience in elastic cloud computing technologies. Prior to founding Tuya, Mr. Wang founded PHPWind, one of the most popular open source forums software in China, in 2003. In May 2008, PHPWind was acquired by Alibaba Group. From May 2008 to February 2014, Mr. Wang worked at Alibaba Group, where he served as a senior director and he was responsible for leading and launching a number of major technology and product innovations for Alibaba Cloud and Alipay, including Alibaba's QR code payment system. Mr. Wang received a bachelor's degree in information and technology science from Zhejiang Sci-Tech University in the PRC in June 2005. Mr. Wang was recognized by Forbes as a member of China's Thirty Entrepreneurs under 30 in February 2012, and was named by Fortune China as one of China's Forty Business Elites under 40 in April 2021.

Liaohan (Leo) Chen co-founded Tuya in 2014 and currently serves as a director and our president. Mr. Chen is responsible for the overall strategies, management, business development and overall customer relationship of Tuya. Prior to co-founding Tuya, Mr. Chen is the co-founder of PHPWind. Mr. Chen served as an operations director at Alibaba Group, where he worked on Alibaba Cloud and Alibaba's O2O business, leading the application of technology and business operation, from May 2008 to May 2014. Mr. Chen received a bachelor's degree in information and computing science from Zhejiang Sci-Tech University in the PRC in June 2005, and received a master's degree in computer applied technology from Zhejiang Sci-Tech University in the PRC in July 2010.

Yi (Alex) Yang co-founded Tuya in 2014 and has served as our chief operation officer since May 2015. Mr. Yang serves as our director since March 2021. Mr. Yang is responsible for human resources, government relations and daily operations of Tuya. Prior to co-founding Tuya, Mr. Yang worked as a business development senior expert at Alibaba Group from April 2011 to May 2015, where he was responsible for developing business opportunities for multiple projects including mobile payment at Alibaba's O2O business and Alibaba Cloud. Mr. Yang received a bachelor's degree in international business and economics from Guangdong University of Foreign Studies in the PRC in July 2004.

Yao (Jessie) Liu has served as our senior vice president and chief financial officer since May 2019. Ms. Liu serves as our director since March 2021. Ms. Liu is responsible for capital market, investment, finance, legal and internal controls, strategy analysis and planning of Tuya. Prior to joining Tuya, Ms. Liu worked at Deutsche Bank Group from July 2007 to December 2009, where her last position was associate in global banking division. Ms. Liu worked at UBS AG from December 2009 to May 2014, where her last position was executive director in investment bank division. Prior to May 2016, Ms. Liu worked at Red Capital Group Limited. From May 2016 to July 2018, Ms. Liu was the founding partner of RJ Capital Group. Ms. Liu had been an independent non-executive director at Zhengzhou Coal Mining

Machinery Group Co., Ltd. (a company listed on the Hong Kong Stock Exchange, stock code: 564; a company listed on Shanghai Stock Exchange, stock code: 601717) from June 2014 to June 2020. Ms. Liu received a bachelor's degree in materials chemistry from Xiamen University in the PRC in July 1996, and a master's degree in business administration from the University of Pennsylvania in the United States in May 2007.

Ruixin Zhou co-founded Tuya in 2014 and has served as our chief technology officer since June 2014. Mr. Zhou is responsible for the overall technology research and development of the products of Tuya. Mr. Zhou has been leading our technology teams and is playing a vital role in building the Tuya IoT cloud platform. Mr. Zhou has over 10 years' experience in cloud infrastructure development. Prior to co-founding the Company, Mr. Zhou served as research and development, operation and maintenance engineer at Hangzhou Detian Information Technology Co., Ltd. which operated PHPWind from 2006 to May 2008, and was acquired by Alibaba Group in May 2008. Mr. Zhou served at Alibaba Group, where he was responsible for technical operations works in PHPWind and Alibaba Cloud from May 2008 to April 2014. Mr. Zhou received a bachelor's degree in information and computing science from Zhejiang Sci-Tech University in the PRC in June 2005.

Scott David Sandell served as our director between December 2014 and August 2017 and has been re-appointed as a director since April 2018. Mr. Sandell has served as Managing General Partner of New Enterprise Associates, Inc. (NEA), a venture capital firm, since April 2017, Co-Managing General Partner from March 2015 to April 2017, and as a General Partner since September 2000. Mr. Sandell joined NEA in January 1996 and served as head of the firm's technology investing practice for 10 years. He currently serves as lead independent director of Cloudflare, Inc. (NYSE: NET), an internet security company, and as a director of Bloom Energy Corporation (NYSE: BE), a clean energy company, as well as several privately-held companies. Mr. Sandell previously served on the board of directors of Fusion-io, Inc., a computer hardware and software systems company acquired by SanDisk Corporation, Tableau Software, Inc., a software company, Workday, Inc., a provider of on demand financial management and human capital management software, and Spreadtrum Communications, Inc., a semiconductor company acquired by Tsinghua Unigroup. Mr. Sandell holds an A.B. in Engineering from Dartmouth College and an M.B.A. from Stanford University.

Carmen I-Hua Chang has served as our director since December 2014. Ms. Chang is responsible for providing professional opinion and judgment to the board. In 2013, Ms. Chang joined NEA and she current serves as a general partner and chairman and head in Asia (Ex-India) at NEA. Prior to joining NEA, Ms. Chang worked at Wilson Sonsini Goodrich and Rosati from February 2001 to 2003, and from August 2005 to February 2012. Ms. Chang had been an independent non-executive director in AAC Technologies Holdings Inc. (a company listed on the Hong Kong Stock Exchange, stock code: 2018) from May 2010 to May 2018. Ms. Chang has also become the director of Coursera, Inc. (a company listed on the NYSE, symbol: COUR) since October 2021. Ms. Chang received a M.A. degree in history from Stanford University in the United States in April 1981, and a juris doctor from Stanford Law School in the United States in June 1993.

Jeff Immelt serves as our director since March 2021. Mr. Immelt joined NEA in 2018 as a Venture Partner on both the technology and healthcare investing teams. Mr. Immelt previously served as chairman and CEO of GE for 16 years where he revamped the company's strategy, global footprint, workforce and culture. Mr. Immelt has been named one of the "World's Best CEOs" three times by Barron's. He also serves on the board for NEA portfolio companies Bloom Energy Corporation, Bright Health, Cleo, Collective Health, Desktop Metal, Formlabs, Radiology Partners, and Tri Alpha Energy. In addition, Mr. Immelt is on the board of Sila Nanotechnologies and Twilio, a public company that leads in mobile communication, and HCICV (a publicly traded SPAC). Mr. Immelt holds a B.A. in Applied Mathematics and Economics from Dartmouth College and an MBA from Harvard Business School.

Qing Gao has served as an observer on our Board of Directors since August 2017 and serves as our director since March 2021. Ms. Gao currently serves as a partner managing director at China International Capital Corporation Limited ("CICC"). She is the founding partner and manager of several private equity funds at the CICC Capital Management Department. In 2016, she raised and founded CICC Genesis, one of the largest venture capital funds of funds in China. Prior to 2016, she worked at the Investment Banking Department of CICC. She also served as the co-head of the Super-Enterprise Group and the head of Human Resources Committee at the department. Prior to joining CICC in 1998, Ms. Gao worked at the Audit Division of Arthur Andersen. She holds a B.S. degree in International Finance from Renmin

University of China. She is a Certified Public Accountant in China and holds securities professional licenses in both China and Hong Kong SAR.

Jing Hong serves as our director since March 2021. Ms. Hong is responsible for providing professional opinion and judgment to the board. Ms. Hong has been engaged in growth stage private equity investment for over 15 years. Prior to joining the Company, Ms. Hong worked at McKinsey & Company from August 1998 to June 2005 and at which her last position was engagement manager, as a senior associate at Warburg Pincus LLC from September 2005 to December 2005. Ms. Hong served various positions in General Atlantic LLC from January 2008 to December 2012, including the principal, head of global emerging markets consumer sector, and managing director as her last position. Subsequently, Ms. Hong served as a partner of investment research department of Zhuhai Gaoling Equity Investment Management Ltd. from January 2013 to February 2018, after which Ms. Hong founded Ningbo Gaocheng Houde Equity Investment Co., Ltd. as the founding partner. Ms. Hong is also the director of Gaocheng Holdings GP Ltd., the general partner of the investment fund which wholly owns GTY Holdings Limited. Ms. Hong received a bachelor's degree in international finance and a master's degree in management engineering from Tsinghua University in the PRC in July 1996 and June 1998, respectively. Ms. Hong also received a master's degree in business administration from Harvard University in the United States in June 2005.

6.B. Compensation

For the fiscal year ended December 31, 2021, we paid an aggregate of US$0.8 million in cash compensation to our directors and executive officers. We have not set aside or accrued any amount to provide pension, retirement or other similar benefits to our directors and executive officers, except to the extent required by applicable laws and regulations. Our PRC subsidiaries and the VIE are required by law to make contributions equal to certain percentages of each employee's salary for his or her pension insurance, medical insurance, unemployment insurance and other statutory benefits and a housing provident fund.

Employment Agreements and Indemnification Agreements

We have entered into employment agreements with each of our executive officers. Under these agreements, each of our executive officers is employed for a specified time period. We may terminate employment for cause, at any time, without advance notice or remuneration, for certain acts of the executive officer, such as conviction or plea of guilty to a felony or any crime involving moral turpitude, negligent or dishonest acts to our detriment, or misconduct or a failure to perform agreed duties. We may also terminate an executive officer's employment without cause upon three-month advance written notice. In such case of termination by us, we will provide severance payments to the executive officer as may be agreed between the executive officer and us. The executive officer may resign at any time with a three-month advance written notice.

Each executive officer has agreed to hold, both during and after the termination or expiry of his or her employment agreement, in strict confidence and not to use, except as required in the performance of his or her duties in connection with the employment or pursuant to applicable law, any of our confidential information or trade secrets, any confidential information or trade secrets of our customers or prospective customers, or the confidential or proprietary information of any third-party received by us and for which we have confidential obligations. The executive officers have also agreed to disclose in confidence to us all inventions, designs and trade secrets which they conceive, develop or reduce to practice during the executive officer's employment with us and to assign all right, title and interest in them to us, and assist us in obtaining and enforcing patents, copyrights and other legal rights for these inventions, designs and trade secrets.

In addition, each executive officer has agreed to be bound by non-competition and non-solicitation restrictions during the term of his or her employment and typically for one year following the last date of employment. Specifically, each executive officer has agreed not to (i) approach our suppliers, clients, direct or end customers or contacts or other persons or entities introduced to the executive officer in his or her capacity as a representative of us for the purpose of doing business with such persons or entities that will harm our business relationships with these persons or entities; (ii) assume employment with or provide services to any of our competitors, or engage, whether as principal, partner, licensor or otherwise, any of our competitors, without our express consent; or (iii) seek directly or indirectly, to solicit

the employment or services of, or hire or engage, any person who is known to be employed or engaged by us; or (iv) otherwise interfere with our business or accounts.

We have also entered into indemnification agreements with each of our directors and executive officers. Under these agreements, we agree to indemnify our directors and executive officers against certain liabilities and expenses incurred by such persons in connection with claims made by reason of their being a director or officer of our company.

Share Incentive Plan

2015 Equity Incentive Plan

We adopted an employee equity incentive plan, or the 2015 Plan, on December 23, 2014, which was amended in July 2020 and February 2021. The purpose of the 2015 Plan is to attract and retain the best available personnel for positions of substantial responsibility, to provide additional incentives to selected Employees, Directors, and Consultants and to promote the success of our business. Under the 2015 Plan, the maximum aggregate number of ordinary shares we are authorized to issue pursuant to equity awards granted thereunder is initially 76,778,005 shares, provided that, starting on January 1, 2022, on the first day of each fiscal year thereafter, the total number of shares available for issuance under the 2015 Plan will be increased by an amount equal to the least of (i) 2% of the aggregate number of shares of all classes of our ordinary shares issued and outstanding on the last day of the immediately preceding fiscal year and (ii) such number of shares as determined by our board of directors. As of April 12, 2022, the maximum aggregate number of ordinary shares we are authorized to issue pursuant to equity awards granted under the 2015 Plan is 88,202,936 shares. As of the same date, (i) options to purchase a total of 59,158,375 ordinary shares were outstanding under the 2015 Plan, and 28,743,097 of such options had vested and become exercisable; and (ii) restricted share units to receive a total of 5,223,500 ordinary shares were granted to our employees other than members of our senior management and were outstanding under the 2015 Plan, none of which had vested.

The following paragraphs summarize the terms of the 2015 Plan.

Types of Awards. The 2015 Plan permits the awards of options, restricted shares and restricted share units as the Administrator may determine.

Plan Administration. The 2015 Plan shall be administrated by the board or any committee of the board.

Eligibility. Any employee, director or consultant of the company and qualified members with 10% shall be eligible to participate in the 2015 Plan.

Award Agreement. Each grant of an award under the 2015 Plan shall be evidenced by an award agreement between the participant and the company. Each award shall be subject to all applicable terms and conditions of the 2015 Plan and may be subject to any other terms and conditions that are not inconsistent with the 2015 Plan and that the plan administrator deems appropriate for inclusion in an award agreement. The provisions of the various award agreements entered into under the 2015 Plan need not be identical.

Terms and Conditions of Award. The award agreement shall set forth the provisions, terms, and conditions of each award including, but not limited to, the types of awards, award vesting schedule, number of awards to be granted and the number of shares to be covered by the awards, exercise price, any restrictions or limitations on the award and term of each award.

Amendment, Suspension or Termination of the 2015 Plan. With the approval of the board of any plan amendment to the extent necessary or desirable to comply with applicable law, the plan administrator may at any time amend, alter, suspend, or terminate the 2015 Plan; no amendment, alteration, suspension, or termination of the 2015 Plan shall materially and adversely affect any award previously granted pursuant to the 2015 Plan unless mutually agreed otherwise between the participant and the administrator, which agreement must be in writing and signed by the participant and the company.

The following table summarizes, as of April 12, 2022, the number of ordinary shares underlying outstanding options that we granted to our directors and executive officers.

	Ordinary Shares Underlying Options Granted	Exercise Price (US$/Share)	Date of Grant	Date of Expiration
Xueji (Jerry) Wang	*	0.20	February 21, 2021	February 20, 2031
Liaohan (Leo) Chen	—	—	—	—
Yi (Alex) Yang	6,500,000	0.20	from August 6, 2015 to January 5, 2021	from August 5, 2025 to January 4, 2031
Ruixin Zhou	—	—	—	—
Yao (Jessie) Liu	*	0.20	from May 15, 2019 to September 16, 2021	from May 14, 2029 to September 15, 2031
Scott David Sandell	—	—	—	—
Carmen I-Hua Chang	—	—	—	—
Jeff Immelt	*	1.08	November 11, 2019	November 10, 2029
Qing Gao	—	—	—	—
Jing Hong	—	—	—	—
All directors and executive officers as a group	17,100,000	0.20 to 1.08	from August 6, 2015 to September 16, 2021	from August 5, 2025 to September 15, 2031

* Less than 1% of our total outstanding shares.

As of April 12, 2022, our employees other than members of our senior management as a group held options to purchase 42,058,375 ordinary shares, with exercise prices ranging from US$0.04135 per share to US$2.88 per share.

6.C. Board Practices

Board of Directors

Our board of directors consists of nine directors, including four independent directors, namely Scott Sandell, Carmen Chang, Jing Hong and Qing Gao. Each of Xueji (Jerry) Wang and Liaohan (Leo) Chen serves as the co-chairman of our board of directors. A director is not required to hold any shares in our company to qualify to serve as a director. The Corporate Governance Rules of the NYSE generally require that a majority of an issuer's board of directors must consist of independent directors. However, the Corporate Governance Rules of the NYSE permit foreign private issuers like us to follow "home country practice" in certain corporate governance matters. We rely on this "home country practice" exception and do not have a majority of independent directors serving on our board of directors.

A director who is in any way, whether directly or indirectly, interested in a contract or proposed contract with our company is required to declare the nature of his or her interest at a meeting of our directors. A general notice given to the directors by any director to the effect that he or she is a member, shareholder, director, partner, officer or employee of any specified company or firm and is to be regarded as interested in any contract or transaction with that company or firm shall be deemed a sufficient declaration of interest for the purposes of voting on a resolution in respect to a contract or transaction in which he/she has an interest, and after such general notice it shall not be necessary to give special notice relating to any particular transaction. A director may vote in respect of any contract or proposed contract or arrangement notwithstanding that he/she may be interested therein and if he/she does so, his/her vote shall be counted and he/she may be counted in the quorum at any meeting of the directors at which any such contract or proposed contract or arrangement is considered, provided (i) such director, if his or her interest in such contract or arrangement is material, has declared the nature of his or her interest at the earliest meeting of the board at which it is practicable for him or her to do so, either specifically or by way of a general notice and (ii) if such contract or arrangement is a transaction with a related party, such transaction has been approved by the audit committee.

Our board of directors may exercise all of the powers of our company to borrow money, to mortgage or charge its undertaking, property and uncalled capital, or any part thereof, and to issue debentures, debenture stock or other securities whenever money is borrowed or as security for any debt, liability or obligation of our company or of any third party. None of our directors has a service contract with us that provides for benefits upon termination of service as a director.

Committees of the Board of Directors

We have established an audit committee, a compensation committee and a nominating and corporate governance committee under our board of directors and have adopted a charter for each of the three committees. Each committee's members and functions are described below.

Audit Committee. Our audit committee consists of Jing Hong and Qing Gao, and is chaired by Qing Gao. We have determined that each of Jing Hong and Qing Gao satisfies the requirements of Section 303A of the Corporate Governance Rules of the NYSE and meets the independence standards under Rule 10A-3 under the Securities Exchange Act of 1934, as amended. We have determined that Jing Hong qualifies as an "audit committee financial expert." The audit committee oversees our accounting and financial reporting processes and the audits of the financial statements of our company. The audit committee is responsible for, among other things:

- reviewing and recommending to our board for approval, the appointment, re-appointment or removal of the independent auditor, after considering its annual performance evaluation of the independent auditor;
- approving the remuneration and terms of engagement of the independent auditor and pre-approving all auditing and non-auditing services permitted to be performed by our independent auditors;
- obtaining a written report from our independent auditor describing matters relating to its independence and quality control procedures;
- reviewing with the independent registered public accounting firm any audit problems or difficulties and management's response;
- discussing with our independent auditor, among other things, the audits of the financial statements, including whether any material information should be disclosed, issues regarding accounting and auditing principles and practices;
- reviewing and approving all proposed related party transactions, as defined in Item 7 of Form 20-F;
- reviewing and recommending the financial statements for inclusion within our quarterly earnings releases and to our board for inclusion in our annual reports;

- discussing the annual audited financial statements with management and the independent registered public accounting firm;
- reviewing the adequacy and effectiveness of our accounting and internal control policies and procedures and any special steps taken to monitor and control major financial risk exposures;
- periodically reviewing and reassessing the adequacy of the committee charter;
- at least annually, approving annual audit plans, and undertaking an annual performance evaluation of the internal audit function;
- overseeing and evaluating the handling of complaints and whistleblowing;
- meeting separately and periodically with management and the independent registered public accounting firm;
- monitoring compliance with our code of business conduct and ethics, including reviewing the adequacy and effectiveness of our procedures to ensure proper compliance; and
- reporting regularly to the board.

Compensation Committee. Our compensation committee consists of Xueji (Jerry) Wang, Scott Sandell and Carmen Chang and is chaired by Carmen Chang. We have determined that each of Scott Sandell and Carmen Chang satisfies the "independence" requirements of Section 303A of the Corporate Governance Rules of the NYSE. The compensation committee assists the board in reviewing and approving the compensation structure, including all forms of compensation, relating to our directors and executive officers. Our chief executive officer may not be present at any committee meeting during which their compensation is deliberated upon. The compensation committee is responsible for, among other things:

- overseeing the development and implementation of compensation programs in consultation with our management;
- reviewing and approving, or recommending to the board for its approval, the compensation for our executive officers;
- reviewing periodically and submitting for board's approval of any incentive compensation or equity plans, programs or other similar arrangements;
- overseeing our regulatory compliance with respect to compensation matters, including our policies on restrictions on compensation plans and loans to directors and executive officers;
- periodically reviewing and reassessing the adequacy of the committee charter;
- selecting compensation consultant, legal counsel or other adviser only after taking into consideration all factors relevant to that person's independence from management; and
- reporting regularly to the board.

Nominating and Corporate Governance Committee. Our nominating and corporate governance committee consists of Xueji (Jerry) Wang, Carmen Chang and Jing Hong, and is chaired by Xueji (Jerry) Wang. We have determined that each of Carmen Chang and Jing Hong satisfies the "independence" requirements of Section 303A of the Corporate Governance Rules of the NYSE. The nominating and corporate governance committee assists the board in selecting individuals qualified to become our directors and in determining the composition of the board and its committees. The nominating and corporate governance committee is responsible for, among other things:

- recommending nominees to the board for election or re-election to the board, or for appointment to fill any vacancy on the board;
- reviewing periodically the current composition of the board with regards to characteristics such as issues of judgment, diversity, age, skills, background and experience;
- reviewing candidates' qualifications for membership on the board or a committee of the board based on the criteria approved by the board;
- making recommendations to the board as to determinations of director independence;
- reviewing and reassessing the adequacy of the committee charter;
- reviewing and approving compensation (including equity-based compensation) for our directors; and
- evaluating the performance and effectiveness of the board as a whole.

Duties and Functions of Directors

Under Cayman Islands law, our directors owe fiduciary duties to our company, including a duty of loyalty, a duty to act honestly and a duty to act in what they consider in good faith to be in our best interests. Our directors must also exercise their powers only for a proper purpose. Our directors also owe to our company a duty to act with skill and care. It was previously considered that a director need not exhibit in the performance of his duties a greater degree of skill than may reasonably be expected from a person of his knowledge and experience. However, English and Commonwealth courts have moved towards an objective standard with regard to the required skill and care and these authorities are likely to be followed in the Cayman Islands. In fulfilling their duty of care to us, our directors must ensure compliance with our memorandum and articles of association, as amended and restated from time to time. Our company has the right to seek damages if a duty owed by our directors is breached. In limited exceptional circumstances, a shareholder may have the right to seek damages in our name if a duty owed by our directors is breached. In accordance with our MAA, the functions and powers of our board of directors include, among others, (i) convening shareholders' annual general meetings and reporting its work to shareholders at such meetings, (ii) declaring dividends, (iii) appointing officers and determining their terms of offices and responsibilities, and (iv) approving the transfer of shares of our company, including the registering of such shares in our share register. In addition, in the event of a tie vote, the chairman of our board of directors has, in addition to his personal vote, the right to cast a tie-breaking vote.

Terms of Directors and Officers

Our officers are elected by and serve at the discretion of the board. A director shall hold office until the expiration of his or her term or his or her successor shall have been elected and qualified, or until his or her office is otherwise vacated. A director may be removed from office by ordinary resolution of shareholders or the affirmative vote of a simple majority of the other directors present and voting at a board meeting, provided that in the event that the chairman of the board of directors is to be removed by the affirmative vote of a simple majority of the other directors present and voting at a board meeting, such affirmative vote shall include the vote of at least one Management Director (as defined under the MAA). If a Management Director is removed from office or otherwise ceases to be a director, Mr. Xueji (Jerry) Wang shall have the right to appoint another person as a director and as replacement of the former Management Director by delivering a written notice to us and such replacement shall become effective automatically upon the delivery of such notice without any further action or resolution of the directors or shareholders, provided that Mr. Xueji (Jerry) Wang shall not be entitled to exercise such right if he and his affiliates do not beneficially own any shares. A director will be removed from office automatically if, among other things, the director (i) resigns by notice in writing to our company; (ii) dies, becomes bankrupt or makes any arrangement or composition with his or her creditors generally; (iii) is prohibited by any applicable law or stock exchange rules from being a director; (iv) is found to be or becomes of unsound mind; or (v) is removed from office pursuant to any other provision of our post offering amended and restated memorandum and articles of association.

Interested Transactions

A director may, subject to any separate requirement for audit committee approval under applicable law or applicable NYSE rules, vote in respect of any contract or transaction in which he or she is interested, provided that the nature of the interest of any directors in such contract or transaction is disclosed by him or her at or prior to its consideration and any vote in that matter.

6.D. Employees

We had 1,504, 2,258 and 3,470 salaried employees as of December 31, 2019 and 2020 and December 31, 2021, respectively. As of December 31, 2021, a substantial majority of our full-time employees were based in China, while the remaining of them were based in the U.S., India, Germany, Japan and Colombia.

We primarily recruit our employees through on-campus job fairs, recruitment agencies and online channels, including our corporate website and third-party employment websites. As required by PRC laws and regulations, we participate in housing fund and various employee social security plans that are organized by applicable local municipal and provincial governments, including housing fund, pension, medical, work injury, unemployment and maternity insurance. We or agents engaged by us are required under PRC laws and regulations to contribute to employee social security plans at specified percentages of the salaries, bonuses and certain allowances of our employees.

The following table sets forth the breakdowns of our employees by functions as of December 31, 2021:

Function	Number of Employees	Percent of Total
Research and development	2,561	73.8 %
Sales and marketing	719	20.7 %
General and administrative	183	5.3 %
Cost control	7	0.2 %
Total	3,470	100.0 %

We are subject to, and comply with, applicable labor law requirements, which may automatically make our employees subject to industry-wide collective bargaining agreements. We believe that we maintain a good working relationship with our employees, and we have not experienced any material labor disputes in the past. None of our employees are represented by labor unions with respect to his or her employment.

6.E. Share Ownership

The following table sets forth information concerning the beneficial ownership of our ordinary shares as of April 12, 2022 by:

- each of our directors and executive officers; and
- each person known to us to beneficially own more than 5% of our ordinary shares.

We have adopted a dual class voting structure. The calculations in the table below are based on 571,246,560 ordinary shares issued and outstanding as of April 12, 2022, consisting of 491,846,560 class A ordinary shares (including 5,433,895 Class A ordinary shares issued to the depositary bank for bulk issuance of ADSs reserved for future issuances upon the exercise or vesting of awards granted under our 2015 Plan and 10,828,614 Class A ordinary shares represented by ADSs that have been repurchased by us from open market) and 79,400,000 Class B ordinary shares.

Beneficial ownership is determined in accordance with the rules and regulations of the SEC. In computing the number of shares beneficially owned by a person and the percentage ownership of that person, we have included shares that the person has the right to acquire within 60 days, including through the exercise of any option, warrant, or other right or the conversion of any other security. These shares, however, are not included in the computation of the percentage ownership of any other person.

	Ordinary Shares Beneficially Owned as of April 12, 2022				
	Class A Ordinary Shares Number	Class B Ordinary Shares Number	Total ordinary shares Number	% **	Voting Power % ***
Directors and Executive Officers: †					
Xueji (Jerry) Wang[1]	63,000,000	50,600,000	113,600,000	19.9	49.3
Liaohan (Leo) Chen[2]	—	28,800,000	28,800,000	5.0	25.9
Yi (Alex) Yang	*	—	*	*	*
Ruixin Zhou[3]	21,600,000	—	21,600,000	3.8	1.3
Yao (Jessie) Liu	*	—	*	*	*
Scott Sandell[4]	123,284,633	—	123,284,633	21.6	7.4
Carmen Chang	—	—	—	—	—
Jeff Immelt	*	—	*	*	*
Qing Gao	—	—	—	—	—
Jing Hong [5]	12,222,267	—	12,222,267	2.1	0.7
All directors and executive officers as a group	225,706,900	79,400,000	305,106,900	52.9	84.7
Principal Shareholders:					
NEA entities[6]	123,284,633	—	123,284,633	21.6	7.4
Tenet Group Limited[7]	63,000,000	—	63,000,000	11.0	3.8
Tencent entities[8]	58,299,749	—	58,299,749	10.2	3.5
Tenet Vision Limited[9]	—	40,600,000	40,600,000	7.1	36.5
Unileo Limited[10]	—	28,800,000	28,800,000	5.0	25.9
Tuya Group Inc.[11]	—	10,000,000	10,000,000	1.8	9.0

Notes:

* Less than 1% of our total issued and outstanding shares on an as-converted basis.

** For each person and group included in this table, percentage ownership is calculated by dividing the number of shares beneficially owned by such person or group by the sum of (i) 571,246,560, being the number of ordinary shares on an as-converted basis issued and outstanding as of April 12, 2022 (including 5,433,895 Class A ordinary shares issued to the depositary bank for bulk issuance of ADSs reserved for future issuances upon the exercise or vesting of awards granted under our 2015 Plan and 10,828,614 Class A ordinary shares represented by ADSs that have been repurchased by us from open market); and (ii) the number of ordinary shares underlying share options held by such person or group that are exercisable within 60 days after April 12, 2022.

*** For each person and group included in this column, percentage of voting power is calculated by dividing the voting power beneficially owned by such person or group by the voting power of (i) all of our issued and outstanding ordinary shares as a single class and (ii) the ordinary shares underlying share options held by such person or group that are exercisable within 60 days after April 12, 2022.

† The address of our directors and executive officers (except Scott Sandell, Carmen Chang, Jeff Immelt, Qing Gao and Jing Hong) is Huace Center, Building A, 10/F, Xihu District, Hangzhou City Zhejiang, 310000, People's Republic of China. The address of Scott Sandell, Carmen Chang and Jeff Immelt is 1954 Greenspring Drive, Suite 600, Timonium, MD 21093. The address of Qing Gao is 1 Jian Guo Men Wai Ave., China World Tower 3B, F26, 100004, Beijing, China. The address of Jing Hong is Suite 1213, 12/F West Tower, Genesis Beijing, No. 8 Xinyuan South Road, Chaoyang District, 100027 P.R. China.

(1) Represents 10,000,000 Class B ordinary shares held of record by Tuya Group Inc., a business company with limited liability incorporated under the laws of BVI wholly owned by Xueji (Jerry) Wang, (ii) 63,000,000 Class A ordinary shares held of record by Tenet Group Limited a British Virgin Islands company, and (iii) 40,600,000 Class B ordinary shares held of record by Tenet Vision Limited, a limited liability company incorporated under the laws of BVI. Both of Tenet Group Limited and Tenet Vision Limited are ultimately wholly owned by the trustee of a trust constituted under the laws of the Cayman Islands, of which the settlor is Xueji (Jerry) Wang and the beneficiaries are Mr. Wang and Tuya Group Inc. The registered address of each of Tuya Group Inc. and Tenet Group Limited is Craigmuir Chambers, Road Town, Tortola, VG 1110, British Virgin Islands. The registered address of Tenet Vision Limited is Coastal Building, Wickham's Cay II, P.O. Box 2221, Road Town, Tortola, British Virgin Islands.

(2) Represents 28,800,000 Class B ordinary shares held of record by Unileo Limited, a limited liability company incorporated under the laws of BVI wholly owned by Liaohan (Leo) Chen. The registered address of Unileo Limited is Craigmuir Chambers, Road Town, Tortola. VG 1110, British Virgin Islands.

(3) Represents 21,600,000 Class A ordinary shares held of record by Valgolden Limited, a limited liability company incorporated under the laws of BVI wholly owned by Ruixin Zhou. The registered address of Valgolden Limited is Craigmuir Chambers. Road Town, Tortola, VG 1110, British Virgin Islands.

(4) Represents 123,284,633 Class A ordinary shares disclosed in footnote (6) below that are held directly by New Enterprise Associates 14, L.P. and NEA 15 Opportunity Fund, L.P. Scott Sandell has disclaimed beneficial ownership of all the above referenced securities (as described in footnote (6) below) except to the extent of his actual pecuniary interest therein.

(5) Represents 12,222,267 Class A ordinary shares held of record by GTY Holdings Limited, a company registered in the Cayman Islands. The registered address of GTY Holdings Limited is Cayman Corporate Centre, 27 Hospital Road, George Town, Grand Cayman KY1-9008, Cayman Islands. Jing Hong is the beneficial owner and general partner of the funds that own GTY Holdings Limited.

(6) Represents 111,923,991 Class A ordinary shares held of record by New Enterprise Associates 14, L.P. ("NEA 14") and 11,360,642 Class A ordinary shares held of record by NEA 15 Opportunity Fund L.P. ("NEA 15-OF"). The shares directly held by NEA 14 are indirectly held by NEA Partners 14, L.P. ("Partners 14"), which is the sole general partner of NEA 14; NEA 14 GP, LTD ("NEA 14 LTD"), the sole general partner of Partners 14; and each of the individual directors of NEA 14 LTD (collectively, the "NEA 14 Directors"). The NEA 14 Directors are Scott Sandell, one of our directors, and certain other individuals. Partners 14, NEA 14 LTD, and the NEA 14 Directors share voting and dispositive power with regard to the shares held directly by NEA 14. The shares directly held by NEA 15-OF are indirectly held by NEA Partners 15-OF, L.P. ("Partners 15-OF"), the sole general partner of NEA 15-OF; NEA 15 GP, LLC ("NEA 15 LLC"), which is the sole general partner of Partners 15-OF; and each of the individual managers of NEA 15 LLC (collectively, the "NEA 15 Managers"). The NEA 15 Managers are Scott Sandell, one of our directors, and certain other individuals. Partner 15-OF, NEA 15 LLC and the NEA 15 Managers share voting and dispositive power with regard to the shares owned directly by NEA 15-OF. All indirect holders of the above referenced shares disclaim beneficial ownership of all applicable shares except to the extent of their actual pecuniary interest therein. The address for the above referenced NEA entities is 1954 Greenspring Drive, Suite 600, Timonium, MD 21093.

(7) Represents 63,000,000 Class A ordinary shares held of record by Tenet Group Limited, a limited liability company incorporated under the laws of BVI which is wholly owned by Tenet Global Limited and ultimately controlled by Xueji (Jerry) Wang.

(8) Represents (i) 55,924,749 Class A ordinary shares held of record by Tencent Mobility Limited, and (ii) 2,375,000 Class A ordinary shares represented by ADSs held of record by Image Frame Investment (HK) Limited. Both Tencent Mobility Limtied and Image Frame Investment (HK) Limtied are incorporated in Hong Kong and wholly-owned subsidiaries of Tencent. The registered address of Tencent Mobility Limited is Three Pacific Place, 1 Queen's Road East, Wanchai, Hong Kong. Tencent Mobility Limited is wholly owned by Tencent Holdings Limited, a company listed on the Hong Kong Stock Exchange (Stock code: 00700).

(9) Represents 40,600,000 Class B ordinary shares held of record by Tenet Vision Limited, a limited liability company incorporated under the laws of BVI wholly owned by Tenet Global Limited and ultimately controlled by Xueji (Jerry) Wang.

(10) Represents 28,800,000 Class B ordinary shares held of record by Unileo Limited. Unileo Limited is wholly owned by Liaohan (Leo) Chen.

(11) Represents 10,000,000 Class B ordinary shares held of record by Tuya Group Inc., a business company with limited liability incorporated under the laws of BVI wholly owned by Xueji (Jerry) Wang.

To our knowledge, as of April 12, 2022, a total of 121,615,871 of our Class A outstanding ordinary shares were held by four record holders in the United States, including the depositary of our ADS program, representing 21.3% of our total issued and outstanding ordinary shares on an as converted basis as of such date. The number of beneficial owners of the ADSs in the United States is likely to be much larger than the number of record holders of our ordinary shares in the United States. We are not aware of any arrangement that may, at a subsequent date, result in change of control of our company.

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

7.A. Major Shareholders

Please refer to "Item 6. Directors, Senior Management and Employees—6.E. Share Ownership."

7.B. Related Party Transactions

Contractual Arrangements

See "Item 4. Information on the Company—4.C. Organizational Structure—Contractual Arrangements with The VIE and The VIE's Respective Shareholders" for a description of the contractual arrangements by and among our PRC subsidiary, the VIE and the shareholders of the VIE.

Employment Agreements and Indemnification Agreements

See "Item 6. Directors, Senior Management and Employees—6.B. Compensation—Employment Agreements and Indemnification Agreements."

Share Incentive Plan

See "Item 6. Directors, Senior Management and Employees—6.B. Compensation—Share Incentive Plan."

Shareholders Agreement

Other than provisions with respect to registration rights, the description of which is set forth below, all provisions and rights under our shareholders agreement dated September 11, 2019 terminated upon consummation of our initial public offering.

Demand Registration Rights. At any time or from time to time after the earlier of (i) the third (3rd) anniversary of the date of the consummation of the purchase and sale of the Series D Preferred Shares or (ii) the date that is six (6) months after the closing of the IPO, upon a written request from the holders of at least 20% of the registrable securities then outstanding, we shall promptly give written notice of the proposed registration to all other Holders and shall, use our reasonable best efforts to effect as soon as practicable, the registration under the Securities Act of all registrable securities which the holders request to be registered within 15 days after the mailing of such notice by us, provided, however, that the Company shall not be obligated to effect more than two such demand registrations.

Piggyback Registration Rights. If we propose to file a registration statement for a public offering of our securities, we must offer holders of our registrable securities an opportunity to include in the registration the registrable securities that the holders have requested to be registered. There shall be no limit on the number of times the holders may request registration of registrable securities pursuant to such piggyback registration rights.

If the underwriter advises the holders initiating the registration request pursuant to the piggyback registration rights in writing that marketing factors require a limitation on the number of shares to be underwritten, then the underwriter may (i) in the event the offering is the Company's IPO, exclude all of the registrable securities (so long as the only securities included in such offering are those sold for the account of the Company and no securities of other selling shareholders are included), or (ii) otherwise exclude the registrable securities requested to be registered, provided that (A) no registrable securities shall be excluded unless all other equity securities (except for securities sold for the account of the Company) are excluded from the registration and underwriting and so long as the number of registrable securities to be included in such registration is allocated among all holders in proportion, as nearly as practicable, to the respective amounts of registrable securities requested by such Holders to be included and (B) the amount of registrable securities to be included in such registration shall not be reduced below twenty five percent (25%) of the total amount of securities included in such registration.

Form F-3 or S-3 Registration Rights. In case we receive from any holders of registrable securities then outstanding written requests that we effect a registration on Form F-3 or Form S-3, as the case may be, we shall, subject to certain limitations, file a registration statement on Form F-3 or Form S-3 covering the registrable securities and other securities so requested to be registered as soon as practicable after receipt of the request or requests of the holders.

Expenses of Registration. We will bear all registration expenses incurred in connection with any demand, piggyback or F-3 registration, subject to certain limitations.

7.C. Interests of Experts and Counsel

Not applicable.

ITEM 8. FINANCIAL INFORMATION

8.A. Consolidated Statements and Other Financial Information

We have appended consolidated financial statements filed as part of this annual report.

Legal and Administrative Proceedings

From time to time, we may be subject to various claims and legal actions that arise in the ordinary course of our business. We are not a party to, and are not aware of any threat of, any legal or arbitral proceeding, which, in our opinion, would likely have a material and adverse effect on our business, financial condition or results of operations. Defending ourselves in legal and regulatory proceedings is costly and can impose a significant burden on our directors, management and employees. The results of any current or future litigation cannot be predicted with certainty, and regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources, and other factors. See "Item 3. Key Information—3.D. Risk Factors—Risks Related to Our Business and Industry—We may be subject to legal proceedings in the ordinary course of our business. If the outcomes of these proceedings are adverse to us, they could have a material adverse effect on our business, results of operations, and financial condition."

Dividend Policy

We have not previously declared or paid any cash dividend or dividend in kind and we have no plan to declare or pay any dividends in the foreseeable future on our shares or the ADSs representing our Class A ordinary shares. We currently intend to retain our available funds and any future earnings to operate and expand our business. We currently do not have any plan to require our PRC subsidiaries to distribute their retained earnings and intend to retain them to operate and expand our business in the PRC.

We are a holding company incorporated in the Cayman Islands. We rely principally on dividends from our PRC subsidiaries for our cash requirements, including any payment of dividends to our shareholders. PRC regulations may restrict the ability of our PRC subsidiaries to pay dividends to us. See "Item 4. Information on the Company—4.B. Business Overview—Regulation—Regulation Related to Foreign Exchange" and "Item 3. Key Information—3.D. Risk Factors—Risk Related to Doing Business in China—Governmental control of currency conversion may limit our ability to utilize our revenues effectively and affect the value of your investment."

Our board of directors has discretion as to whether to distribute dividends, subject to certain requirements of Cayman Islands law. Under Cayman Islands law, a Cayman Islands company may pay a dividend out of either profit or share premium account, provided that in no circumstances may a dividend be paid if this would result in the company being unable to pay its debts as they fall due in the ordinary course of business. Even if our board of directors decides to pay dividends, the form, frequency and amount will depend upon our future operations and earnings, capital requirements and surplus, general financial condition, contractual restrictions and other factors that the board of directors may deem relevant. If we pay any dividends on our ordinary shares, we will pay those dividends which are payable in respect of the Class A ordinary shares underlying the ADSs to the depositary, as the registered holder of such Class A ordinary shares, and the depositary then will pay such amounts to the ADS holders in proportion to the Class A ordinary shares underlying the ADSs held by such ADS holders, subject to the terms of the deposit agreement, including the fees and expenses payable thereunder. See "Item 12. Description of Securities Other Than Equity Securities—12.D. American Depositary Shares."

8.B. Significant Changes

We have not experienced any significant changes since the date of the annual financial statements included herein.

ITEM 9. THE OFFER AND LISTING

9.A. Offering and Listing Details

Our ADSs have been listed on the NYSE since March 18, 2021 under the symbol "TUYA." Each ADS represents one Class A ordinary share, par value US$0.00005 per share.

9.B. Plan of Distribution

Not applicable.

9.C. Markets

The ADSs representing our Class A ordinary shares have been listed on the NYSE since March 18, 2021 under the symbol "TUYA."

9.D. Selling Shareholders

Not applicable.

9.E. Dilution

Not applicable.

9.F. Expenses of the Issue

Not applicable.

ITEM 10. ADDITIONAL INFORMATION

10.A. Share Capital

Not applicable.

10.B. Memorandum and Articles of Association

We are a Cayman Islands exempted company and our affairs are governed by our memorandum and articles of association, as amended and restated from time to time, and Companies Act of the Cayman Islands, and the common law of the Cayman Islands.

We incorporate by reference into this annual report our MAA, the form of which was filed as Exhibit 3.2 to our registration statement on Form F-1 (File No. 333-253575) filed with the Securities and Exchange Commission on February 26, 2021. Our board of directors adopted our MAA by a special resolution on February 21, 2021, which became effective immediately prior to completion of our initial public offering of ADSs representing Class A our ordinary shares.

The following are summaries of material provisions of our MAA and the Companies Act as they relate to the material terms of our ordinary shares.

Registered Office and Objects

Our registered office in the Cayman Islands is located at Maples Corporate Services Limited, PO Box 309, Ugland House, Grand Cayman, KY1-1104, Cayman Islands.

According to Clause 3 of our MAA, the objects for which we are established are unrestricted and we have full power and authority to carry out any object not prohibited by the Companies Act (as amended) or as the same may be revised from time to time, or any other law of the Cayman Islands.

Board of Directors

See "Item 6. Directors, Senior Management and Employees."

Ordinary Shares

General. Holders of ordinary shares will have the same rights. All of our issued and outstanding ordinary shares are fully paid and non-assessable. Our ordinary shares are issued in registered form and are issued when registered in our register of members. We may not issue share to bearer. Our shareholders who are non-residents of the Cayman Islands may freely hold and transfer their ordinary shares.

Dividends. The holders of our ordinary shares are entitled to such dividends as may be declared by our board of directors subject to our MAA and the Companies Act. Our MAA provides that dividends may be declared and paid out of our profits, realized or unrealized, or from any reserve set aside from profits which our board of directors determine is no longer needed. Dividends may also be declared and paid out of share premium account or any other fund or account which can be authorized for this purpose in accordance with the Companies Act. No dividend may be declared and paid unless our directors determine that, immediately after the payment, we will be able to pay our debts as they become due in the ordinary course of business and we have funds lawfully available for such purpose.

Classes of Ordinary Shares. Our ordinary shares are divided into Class A ordinary shares and Class B ordinary shares. Except for conversion rights and voting rights, the Class A ordinary shares and Class B ordinary shares shall carry equal rights and rank *pari passu* with one another, including but not limited to the rights to dividends and other capital distributions.

Conversion. A Class B ordinary share is convertible into one Class A ordinary share at any time by the holder thereof, while Class A ordinary shares are not convertible into Class B ordinary shares under any circumstances. Upon any sale, transfer, assignment or disposition of Class B ordinary shares by a holder thereof to any person which is not an affiliate of such holder, or upon a change of beneficial ownership of any Class B ordinary shares as a result of which any person who is not an affiliate of the holders of such ordinary shares becomes a beneficial owner of such ordinary shares, such Class B ordinary shares shall be automatically and immediately converted into an equal number of Class A ordinary shares. The Class B ordinary shares, if any, beneficially owned by Mr. Xueji (Jerry) Wang and his affiliates, shall be automatically and immediately converted into an equal number of Class A ordinary shares upon Mr. Xueji (Jerry) Wang ceasing to be our director. For the avoidance of doubt, (i) a sale, transfer, assignment or disposition shall be effective upon the company's registration of such sale, transfer, assignment or disposition in the register of members; (ii) the creation of any pledge, charge, encumbrance or other third-party right of whatever description on any Class B ordinary shares to secure any contractual or legal obligations shall not be deemed as a sale, transfer, assignment or disposition unless and until any such pledge, charge, encumbrance or other third-party right is enforced and results in the third party who is not an affiliate of the relevant member becoming a beneficial owner of the relevant Class B ordinary shares in which case all the related Class B ordinary shares shall be automatically and immediately converted into the same number of Class A ordinary shares, (iii) any sale, transfer, assignment or disposition of any Class B ordinary shares by a holder thereof to any person which is a beneficial owner of Class B ordinary shares shall not trigger the automatic conversion of such Class B ordinary shares into Class A ordinary shares; and (iv) in the event that Mr. Liaohan (Leo) Chen ceases to be a director or an executive officer or employee of the company, any and all of the Class B ordinary shares beneficially owned by Mr. Liaohan (Leo) Chen and any affiliate of Mr. Liaohan (Leo) Chen shall be automatically and immediately converted into an equal number of Class A ordinary shares; provided that in the event that Mr. Liaohan (Leo) Chen ceases to be a director or an executive officer or employee of the Company and has, prior to or concurrently with his ceasing to be in such position, delegated the voting power on any of the Class B ordinary shares that he beneficially owns to Mr. Xueji (Jerry) Wang and/or an affiliate of Mr. Xueji (Jerry) Wang through voting proxy, voting agreement or similar arrangement, the automatic conversion into Class A ordinary shares of such Class B ordinary shares the voting power of which is so delegated shall not be triggered. For the purpose of the foregoing sentence, an "affiliate" of a given shareholder means any other person that, directly or indirectly, controls, is controlled by or is under common control with such person, and for the purposes of the foregoing definition of "affiliate," "control" means, in relation to any person, the power or authority, whether exercised or not, to direct the business, management and policies of such person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise; provided, that such power or authority shall conclusively be presumed to exist upon possession of beneficial ownership or power to direct the vote of more than 50% of the votes entitled to be cast at a meeting of the members or shareholders of such person or power to control the composition of a majority of the board of directors of such person.

Voting Rights. In respect of all matters subject to a shareholders' vote, holders of Class A ordinary shares and Class B ordinary shares shall, at all times, vote together as one class on all matters submitted to a vote by the members. Each Class A ordinary share shall be entitled to one vote on all matters subject to the vote at general meetings of our company, and each Class B ordinary share shall be entitled to 15 votes on all matters subject to the vote at general meetings of our company. Voting at any meeting of shareholders shall be determined by poll and not on a show of hands.

An ordinary resolution to be passed at a meeting by the shareholders requires the affirmative vote of a simple majority of all votes, calculated on a fully converted basis, cast by those shareholders entitled to vote who are present in person or by proxy at a general meeting, while a special resolution requires the affirmative vote of no less than two-thirds of all votes, calculated on a fully converted basis, cast by those shareholders entitled to vote who are present in person or by proxy at a general meeting. Subject to theprovisions of the Companies Act and our eighth amended and restated memorandum and articles of association, a special resolution will be required for important matters such as a change of name or making changes to our MAA.

General Meetings of Shareholders. A quorum required for a meeting of shareholders consists of shareholders holding a majority of all votes attaching to the issued and outstanding shares entitled to vote at general meetings present in person or by proxy or, if a corporation or other non-natural person, by its duly authorized representative. Our MAA provides that we may (but are not obliged to) in each year hold a general meeting as our annual general meeting in which case we will specify the meeting as such in the notices calling it, and the annual general meeting will be held at such time and place as may be determined by our directors. We, however, will hold an annual shareholders' meeting during each fiscal year, as required by the Listing Rules at the NYSE. Each general meeting, other than an annual general meeting, shall be an extraordinary general meeting. Shareholders' annual general meetings and any other general meetings of our shareholders may be called by a majority of our board of directors or our chairman or upon a requisition of shareholders holding at the date of deposit of the requisition not less than one-third of all votes attaching to the issued and outstanding shares entitled to vote at general meetings, in which case the directors are obliged to call such meeting and to put the resolutions so requisitioned to a vote at such meeting; however, our MAA does not provide our shareholders with any right to put any proposals before annual general meetings or extraordinary general meetings not called by such shareholders. Advance notice of at least seven (7) business days is required for the convening of our annual general meeting and other general meetings unless such notice is waived in accordance with our articles of association.

Transfer of Ordinary Shares. Subject to the restrictions in our MAA as set out below, any of our shareholders may transfer all or any of his or her ordinary shares by an instrument of transfer in the usual or common form or any other form approved by our board of directors.

Our board of directors may, in its absolute discretion, decline to register any transfer of any ordinary share which is not fully paid up or on which we have a lien. Our board of directors may also decline to register any transfer of any ordinary share unless:

- the instrument of transfer is lodged with us, accompanied by the certificate for the ordinary shares to which it relates and such other evidence as our board of directors may reasonably require to show the right of the transferor to make the transfer ;
- the instrument of transfer is in respect of only one class of shares;
- the instrument of transfer is properly stamped, if required;
- in the case of a transfer to joint holders, the number of joint holders to whom the ordinary share is to be transferred does not exceed four; and
- a fee of such maximum sum as the NYSE may determine to be payable or such lesser sum as our directors may from time to time require is paid to us in respect thereof.

If our directors refuse to register a transfer they shall, within three months after the date on which the instrument of transfer was lodged, send to each of the transferor and the transferee notice of such refusal.

The registration of transfers may, after compliance with any notice required of the NYSE, be suspended and the register closed at such times and for such periods as our board of directors may from time to time determine, *provided, however*, that the registration of transfers shall not be suspended nor the register closed for 30 more than days in any year as our board may determine.

Liquidation. On the winding up of our company, if the assets available for distribution amongst our shareholders shall be more than sufficient to repay the whole of the share capital at the commencement of the winding up, the surplus shall be distributed amongst our shareholders in proportion to the par value of the shares held by them at the commencement of the winding up, subject to a deduction from those shares in respect of which there are monies due, of all monies payable to our company for unpaid calls or otherwise. If our assets available for distribution are insufficient to repay all of the paid-up capital, the assets will be distributed so that the losses are borne by our shareholders in proportion to the par value of the shares held by them.

Calls on Ordinary Shares and Forfeiture of Ordinary Shares. Our board of directors may from time to time make calls upon shareholders for any amounts unpaid on their ordinary shares in a notice served to such shareholders at least 14 clear days prior to the specified time of payment. The ordinary shares that have been called upon and remain unpaid are subject to forfeiture.

Redemption, Repurchase and Surrender of Ordinary Shares. We may issue shares on terms that such shares are subject to redemption, at our option or at the option of the holders thereof, on such terms and in such manner as may be determined, before the issue of such shares, by our board of directors. Our company may also repurchase any of our shares provided that the manner and terms of such purchase have been approved by our board of directors, or are otherwise authorized by our MAA. Under the Companies Act, the redemption or repurchase of any share may be paid out of our company's profits or out of the proceeds of a fresh issue of shares made for the purpose of such redemption or repurchase, or out of capital (including share premium account and capital redemption reserve) if the company can, immediately following such payment, pay its debts as they fall due in the ordinary course of business. In addition, under the Companies Act no such share may be redeemed or repurchased (a) unless it is fully paid up, (b) if such redemption or repurchase would result in there being no shares outstanding, or (c) if the company has commenced liquidation. In addition, our company may accept the surrender of any fully paid share for no consideration.

Variations of Rights of Shares. If at any time our share capital is divided into different classes or series of shares, the rights attached to any class or series of shares (unless otherwise provided by the terms of issue of the shares of that class or series), whether or not our company is being wound-up, may be varied with the consent in writing of the holders of not less than a majority of the issued shares of that class or series or with the sanction of a special resolution at a separate meeting of the holders of the shares of the class or series. The rights conferred upon the holders of the shares of any class issued shall not, unless otherwise expressly provided by the terms of issue of the shares of that class, be deemed to be varied by the creation or issue of further shares ranking *pari passu* with such existing class of shares.

Inspection of Books and Records. Holders of our ordinary shares have no general right under Cayman Islands law to inspect or obtain copies of our list of shareholders or our corporate records (other than the memorandum and articles of association, the register of mortgages and charges, and copies of any special resolutions passed by our shareholders). However, we will provide our shareholders with annual audited financial statements.

Issuance of Additional Shares. Our MAA authorizes our board of directors to issue additional ordinary shares from time to time as our board of directors shall determine, to the extent of available authorized but unissued shares.

Our MAA also authorizes our board of directors to establish from time to time one or more series of preferred shares and to determine, with respect to any series of preferred shares, the terms and rights of that series, including:

- the designation of the series;
- the number of shares of the series;
- the dividend rights, dividend rates, conversion rights, voting rights; and
- the rights and terms of redemption and liquidation preferences.

Our board of directors may issue preferred shares without action by our shareholders to the extent authorized but unissued. Issuance of these shares may dilute the voting power of holders of ordinary shares.

Anti-Takeover Provisions. Some provisions of our MAA may discourage, delay or prevent a change of control of our company or management that shareholders may consider favorable, including provisions that authorize our board of directors to issue preferred shares in one or more series and to designate the price, rights, preferences, privileges and restrictions of such preferred shares without any further vote or action by our shareholders, and limit the ability of shareholders to requisition and convene general meetings of shareholders.

However, under Cayman Islands law, our directors may only exercise the rights and powers granted to them under our MAA for a proper purpose and for what they believe in good faith to be in the best interests of our company.

Exempted Company. We are an exempted company with limited liability under the Companies Act. The Companies Act distinguishes between ordinary resident companies and exempted companies. Any company that is registered in the Cayman Islands but conducts business mainly outside of the Cayman Islands may apply to be registered as an exempted company. The requirements for an exempted company are essentially the same as for an ordinary company except that an exempted company:

- does not have to file an annual return of its shareholders with the Registrar of Companies;
- is not required to open its register of members for inspection;
- does not have to hold an annual general meeting;
- may issue negotiable or bearer shares or shares with no par value;
- may obtain an undertaking against the imposition of any future taxation (such undertakings are usually given for 20 years in the first instance);
- may register by way of continuation in another jurisdiction and be deregistered in the Cayman Islands;
- may register as a limited duration company; and
- may register as a segregated portfolio company.

"Limited liability" means that the liability of each shareholder is limited to the amount unpaid by the shareholder on that shareholder's shares of the company (except in exceptional circumstances, such as involving fraud, the establishment of an agency relationship or an illegal or improper purpose or other circumstances in which a court may be prepared to pierce or lift the corporate veil).

Differences in Corporate Law

The Companies Act is derived, to a large extent, from the older Companies Acts of England, but does not follow many recent English law statutory enactments. In addition, the Companies Act differs from laws applicable to United States corporations and their shareholders. Set forth below is a summary of the significant differences between the provisions of the Companies Act applicable to us and the laws applicable to companies incorporated in the State of Delaware.

Mergers and Similar Arrangements

The Companies Act permits mergers and consolidations between Cayman Islands companies and between Cayman Islands companies and non-Cayman Islands companies. For these purposes, (a) "merger" means the merging of two or more constituent companies and the vesting of their undertaking, property and liabilities in one of such companies as the surviving company, and (b) a "consolidation" means the combination of two or more constituent companies into a consolidated company and the vesting of the undertaking, property and liabilities of such companies to the consolidated company. In order to effect such a merger or consolidation, the directors of each constituent company must approve a written plan of merger or consolidation, which must then be authorized by (a) a special resolution of the shareholders of each constituent company, and (b) such other authorization, if any, as may be specified in such constituent company's articles of association. The written plan of merger or consolidation must be filed with the Registrar of Companies of the Cayman Islands together with a declaration as to the solvency of the consolidated or surviving company, a declaration as to the assets and liabilities of each constituent company and an undertaking that a copy of the certificate of merger or consolidation will be given to the members and creditors of each constituent company and that notification of the merger or consolidation will be published in the Cayman Islands Gazette. Court approval is not required for a merger or consolidation which is effected in compliance with these statutory procedures.

A merger between a Cayman parent company and its Cayman subsidiary or subsidiaries does not require authorization by a resolution of shareholders of that Cayman subsidiary if a copy of the plan of merger is given to every member of that Cayman subsidiary to be merged unless that member agrees otherwise. For this purpose a company is a "parent" of a subsidiary if it holds issued shares that together represent at least 90% of the votes at a general meeting of the subsidiary.

The consent of each holder of a fixed or floating security interest over a constituent company is required unless this requirement is waived by a court in the Cayman Islands.

Save in certain limited circumstances, a shareholder of a Cayman constituent company who dissents from the merger or consolidation is entitled to payment of the fair value of his shares (which, if not agreed between the parties, will be determined by the Cayman Islands court) upon dissenting to the merger or consolidation, provide the dissenting shareholder complies strictly with the procedures set out in the Companies Act. The exercise of dissenter rights will preclude the exercise by the dissenting shareholder of any other rights to which he or she might otherwise be entitled by virtue of holding shares, save for the right to seek relief on the grounds that the merger or consolidation is void or unlawful.

Separate from the statutory provisions relating to mergers and consolidations, the Companies Act also contains statutory provisions that facilitate the reconstruction and amalgamation of companies by way of schemes of arrangement, provided that the arrangement is approved by a majority in number of each class of shareholders and creditors with whom the arrangement is to be made, and who must in addition represent three-fourths in value of each such class of shareholders or creditors, as the case may be, that are present and voting either in person or by proxy at a meeting, or meetings, convened for that purpose. The convening of the meetings and subsequently the arrangement must be sanctioned by the Grand Court of the Cayman Islands. While a dissenting shareholder has the right to express to the court the view that the transaction ought not to be approved, the court can be expected to approve the arrangement if it determines that:

- the statutory provisions as to the required majority vote have been met;
- the shareholders have been fairly represented at the meeting in question and the statutory majority are acting bona fide without coercion of the minority to promote interests adverse to those of the class;
- the arrangement is such that may be reasonably approved by an intelligent and honest man of that class acting in respect of his interest; and
- the arrangement is not one that would more properly be sanctioned under some other provision of the Companies Act.

The Companies Act also contains a statutory power of compulsory acquisition which may facilitate the "squeeze out" of a dissenting minority shareholder upon a tender offer. When a tender offer is made and accepted by holders of 90.0% of the shares affected within four months, the offeror may, within a two-month period commencing on the expiration of such four-month period, require the holders of the remaining shares to transfer such shares to the offeror on the terms of the offer. An objection can be made to the Grand Court of the Cayman Islands but this is unlikely to succeed in the case of an offer which has been so approved unless there is evidence of fraud, bad faith or collusion.

If an arrangement and reconstruction is thus approved, or if a tender offer is made and accepted, a dissenting shareholder would have no rights comparable to appraisal rights, which would otherwise ordinarily be available to dissenting shareholders of Delaware corporations, providing rights to receive payment in cash for the judicially determined value of the shares.

Shareholders' Suits

In principle, we will normally be the proper plaintiff to sue for a wrong done to us as a company, and as a general rule a derivative action may not be brought by a minority shareholder. However, based on English authorities, which would in all likelihood be of persuasive authority in the Cayman Islands, the Cayman Islands court can be expected to follow and apply the common law principles (namely the rule in *Foss v. Harbottle* and the exceptions thereto) which permit a minority shareholder to commence a class action against or derivative actions in the name of the company to challenge actions where:

- a company acts or proposes to act illegally or ultra vires;
- the act complained of, although not ultra vires, could only be effected duly if authorized by more than a simple majority vote that has not been obtained; and
- those who control the company are perpetrating a "fraud on the minority."

Indemnification of Directors and Executive Officers and Limitation of Liability

Cayman Islands law does not limit the extent to which a company's memorandum and articles of association may provide for indemnification of officers and directors, except to the extent any such provision may be held by the Cayman Islands courts to be contrary to public policy, such as to provide indemnification against civil fraud or the consequences of committing a crime. Our eighth amended and restated memorandum and articles of association provide that that we shall indemnify our officers and directors and any trustee against all actions, proceedings, costs, charges, losses, damages and expenses that they or any of them shall or may incur or sustain by reason of any act done or omitted in or about the execution of their duty in their respective offices or trusts, except such (if any) as they shall incur or sustain by or through their own fraud or dishonesty, and no such director or officer or trustee shall be answerable for the acts, receipts, neglects or defaults of any other director or officer or trustee or for joining in any receipt for the sake of conformity or for the solvency or honesty of any banker or other persons with whom any monies or effects belonging to us may be lodged or deposited for safe custody or for any insufficiency of any security upon which any of our monies may be invested or for any other loss or damage due to any such cause as aforesaid or which may happen in or about the execution of his or her office or trust unless the same shall happen through the fraud or dishonesty of such director or officer or trustee. This standard of conduct is generally the same as permitted under the Delaware General Corporation Law for a Delaware corporation.

In addition, we have entered into indemnification agreements with our directors and executive officers that provide such persons with additional indemnification beyond that provided in our eighth amended and restated memorandum and articles of association.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers or persons controlling us under the foregoing provisions, we have been informed that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Directors' Fiduciary Duties

Under Delaware corporate law, a director of a Delaware corporation has a fiduciary duty to the corporation and its shareholders. This duty has two components: the duty of care and the duty of loyalty. The duty of care requires that a director act in good faith, with the care that an ordinarily prudent person would exercise under similar circumstances. Under this duty, a director must inform himself of, and disclose to shareholders, all material information reasonably available regarding a significant transaction. The duty of loyalty requires that a director acts in a manner he reasonably believes to be in the best interests of the corporation. He must not use his corporate position for personal gain or advantage. This duty prohibits self-dealing by a director and mandates that the best interest of the corporation and its shareholders take precedence over any interest possessed by a director, officer or controlling shareholder and not shared by the shareholders generally. In general, actions of a director are presumed to have been made on an informed basis, in good faith and in the honest belief that the action taken was in the best interests of the corporation. However, this presumption may be rebutted by evidence of a breach of one of the fiduciary duties. Should such evidence be presented concerning a transaction by a director, the director must prove the procedural fairness of the transaction, and that the transaction was of fair value to the corporation.

As a matter of Cayman Islands law, a director of a Cayman Islands company is in the position of a fiduciary with respect to the company and therefore it is considered that he owes the following duties to the company—a duty to act bona fide in the best interests of the company, a duty not to make a profit based on his position as director (unless the company permits him to do so), a duty not to put himself in a position where the interests of the company conflict with his personal interest or his duty to a third party, and a duty to exercise powers for the purpose for which such powers were intended. A director of a Cayman Islands company owes to the company a duty to act with skill and care. It was previously considered that a director need not exhibit in the performance of his duties a greater degree of skill than may reasonably be expected from a person of his knowledge and experience. However, English and Commonwealth courts have moved towards an objective standard with regard to the required skill and care and these authorities are likely to be followed in the Cayman Islands.

Shareholder Action by Written Consent

Under the Delaware General Corporation Law, a corporation may eliminate the right of shareholders to act by written consent by amendment to its certificate of incorporation. The Companies Act and our eighth amended and restated articles of association provide that our shareholders may approve corporate matters by way of a unanimous written resolution signed by or on behalf of each shareholder who would have been entitled to vote on such matter at a general meeting without a meeting being held.

Shareholder Proposals

Under the Delaware General Corporation Law, a shareholder has the right to put any proposal before the annual meeting of shareholders, provided it complies with the notice provisions in the governing documents. A special meeting may be called by the board of directors or any other person authorized to do so in the governing documents, but shareholders may be precluded from calling special meetings.

The Companies Act provide shareholders with only limited rights to requisition a general meeting, and does not provide shareholders with any right to put any proposal before a general meeting. However, these rights may be provided in a company's articles of association. Our eighth amended and restated articles of association allow our shareholders holding in aggregate not less than one-third of all votes attaching to the issued and outstanding shares of our company entitled to vote at general meetings to requisition an extraordinary general meeting of our shareholders, in which case our board is obliged to convene an extraordinary general meeting and to put the resolutions so requisitioned to a vote at such meeting. Other than this right to requisition a shareholders' meeting, our post-offering amended and restated articles of association do not provide our shareholders with any other right to put proposals before annual general meetings or extraordinary general meetings not called by such shareholders. As an exempted Cayman Islands company, we are not obliged by law to call shareholders' annual general meetings.

Cumulative Voting

Under the Delaware General Corporation Law, cumulative voting for elections of directors is not permitted unless the corporation's certificate of incorporation specifically provides for it. Cumulative voting potentially facilitates the representation of minority shareholders on a board of directors since it permits the minority shareholder to cast all the votes to which the shareholder is entitled on a single director, which increases the shareholder's voting power with respect to electing such director. There are no prohibitions in relation to cumulative voting under the laws of the Cayman Islands but our eighth amended and restated articles of association do not provide for cumulative voting. As a result, our shareholders are not afforded any less protections or rights on this issue than shareholders of a Delaware corporation.

Removal of Directors

Under the Delaware General Corporation Law, a director of a corporation with a classified board may be removed only for cause with the approval of a majority of the outstanding shares entitled to vote, unless the certificate of incorporation provides otherwise. Under our eighth amended and restated articles of association, directors may be removed with or without cause, by an ordinary resolution of our shareholders. A director shall hold office until the expiration of his or her term or his or her successor shall have been elected and qualified, or until his or her office is otherwise vacated. A director may be removed from office by ordinary resolution of shareholders or the affirmative vote of a simple majority of the other directors present and voting at a board meeting, provided that in the event that the chairman is to be removed by the affirmative vote of a simple majority of the other directors present and voting at a board meeting, such affirmative vote shall include the vote of at least one Management Director (as defined under the eighth amended and restated memorandum and articles of association). In addition, a director's office shall be vacated if the director (i) becomes bankrupt or makes any arrangement or composition with his creditors; (ii) is found to be or becomes of unsound mind or dies; (iii) resigns his office by notice in writing to the company; (iv) without special leave of absence from our board of directors, is absent from three consecutive meetings of the board and the board resolves that his office be vacated; (v) is prohibited by law from being a director; or (vi) is removed from office pursuant to any other provisions of our eighth amended and restated memorandum and articles of association.

Transactions with Interested Shareholders

The Delaware General Corporation Law contains a business combination statute applicable to Delaware corporations whereby, unless the corporation has specifically elected not to be governed by such statute by amendment to its certificate of incorporation, it is prohibited from engaging in certain business combinations with an "interested shareholder" for three years following the date that such person becomes an interested shareholder. An interested shareholder generally is a person or a group who or which owns or owned 15% or more of the target's outstanding voting share within the past three years. This has the effect of limiting the ability of a potential acquirer to make a two-tiered bid for the target in which all shareholders would not be treated equally. The statute does not apply if, among other things, prior to the date on which such shareholder becomes an interested shareholder, the board of directors approves either the business combination or the transaction which resulted in the person becoming an interested shareholder. This encourages any potential acquirer of a Delaware corporation to negotiate the terms of any acquisition transaction with the target's board of directors.

Cayman Islands law has no comparable statute. As a result, we cannot avail ourselves of the types of protections afforded by the Delaware business combination statute. However, although Cayman Islands law does not regulate transactions between a company and its significant shareholders, the directors of the Company are required to comply with fiduciary duties which they owe to the Company under Cayman Islands laws, including the duty to ensure that, in their opinion, any such transactions must be entered into bona fide in the best interests of the company, and are entered into for a proper corporate purpose and not with the effect of constituting a fraud on the minority shareholders.

Dissolution; Winding up

Under the Delaware General Corporation Law, unless the board of directors approves the proposal to dissolve, dissolution must be approved by shareholders holding 100% of the total voting power of the corporation. Only if the dissolution is initiated by the board of directors may it be approved by a simple majority of the corporation's outstanding shares. Delaware law allows a Delaware corporation to include in its certificate of incorporation a supermajority voting requirement in connection with dissolutions initiated by the board.

Under Cayman Islands law, a company may be wound up by either an order of the courts of the Cayman Islands or by a special resolution of its members or, if the company is unable to pay its debts as they fall due, by an ordinary resolution of its members. The court has authority to order winding up in a number of specified circumstances including where it is, in the opinion of the court, just and equitable to do so. Under the Companies Act and our eighth amended and restated articles of association, our company may be dissolved, liquidated or wound up by a special resolution of our shareholders.

Variation of Rights of Shares

Under the Delaware General Corporation Law, a corporation may vary the rights of a class of shares with the approval of a majority of the outstanding shares of such class, unless the certificate of incorporation provides otherwise. Under Cayman Islands law and our eighth amended and restated articles of association, if our share capital is divided into more than one class of shares, we may vary the rights attached to any class with the written consent of the holders of a majority of the issued shares of that class or with the sanction of a special resolution passed at a general meeting of the holders of the shares of that class.

Amendment of Governing Documents

Under the Delaware General Corporation Law, a corporation's governing documents may be amended with the approval of a majority of the outstanding shares entitled to vote, unless the certificate of incorporation provides otherwise. Under the Companies Act and our eighth amended and restated memorandum and articles of association, our memorandum and articles of association may only be amended by a special resolution of our shareholders.

Rights of Non-resident or Foreign Shareholders

There are no limitations imposed by our memorandum and articles of association on the rights of nonresident or foreign shareholders to hold or exercise voting rights on our shares. In addition, there are no provisions in our memorandum and articles of association governing the ownership threshold above which shareholder ownership must be disclosed.

10.C. Material Contracts

We have not entered into any material contracts other than in the ordinary course of business and other than those described in this annual report.

10.D. Exchange Controls

The Cayman Islands currently has no exchange control regulations or currency restrictions.

10.E. Taxation

The following discussion of Cayman Islands, PRC and United States federal income tax consequences of the ownership and disposition of the ADSs or Class A ordinary shares is based upon laws and relevant interpretations thereof in effect as of the date of this annual report, all of which are subject to change. This discussion does not deal with all possible tax consequences relating to the ownership and disposition of the ADSs or Class A ordinary shares, such as the tax consequences under state, local and other tax laws. To the extent that the discussion relates to matters of Cayman Islands tax law, it represents the opinion of Maples and Calder (Hong Kong) LLP, our Cayman Islands counsel. To the extent that the discussion relates to matters of PRC tax law, it represents the opinion of Jia Yuan Law Offices, our PRC legal counsel.

Cayman Islands Taxation

The Cayman Islands currently levies no taxes on individuals or corporations based upon profits, income, gains or appreciation, and there is no taxation in the nature of inheritance tax or estate duty. There are no other taxes likely to be material to us or holders of the ADSs or ordinary shares levied by the government of the Cayman Islands, except for stamp duties which may be applicable on instruments executed in, or after execution brought within the jurisdiction of the Cayman Islands. The Cayman Islands is not party to any double tax treaties that are applicable to any payments made to or by our company. There are no exchange control regulations or currency restrictions in the Cayman Islands.

Payments of dividends and capital in respect of the ADSs or Class A ordinary shares will not be subject to taxation in the Cayman Islands and no withholding will be required on the payment of a dividend or capital to any holder of the ADSs or Class A ordinary shares, nor will gains derived from the disposal of the ADSs or Class A ordinary shares be subject to Cayman Islands income or corporation tax.

People's Republic of China Taxation

Our subsidiaries and consolidated VIE in China are companies incorporated under PRC law and, as such, are subject to PRC enterprise income tax on their taxable income in accordance with the relevant PRC income tax laws. Pursuant to the Enterprise Income Tax Law of the People's Republic of China, (the "PRC EIT Law"), which was amended on December 29, 2018 and became effective on the same date and the Regulation on the Implementation of the Enterprise Income Tax Law of the People's Republic of China, which was amended on April 23, 2019 and became effective on the same date, a uniform 25% enterprise income tax rate is generally applicable to both foreign-invested enterprises and domestic enterprises, except where a special preferential rate applies. In 2019, 2020 and 2021, preferential tax treatment was available to one of our PRC subsidiaries. Hangzhou Tuya Information Technology Co., Ltd was recognized as a high-tech enterprise in November 2018, which allowed it to apply an income tax rate of 15% within the validity period of high-tech enterprise certificate. As of December 31, 2021, the renewal application of Hangzhou Tuya Information Technology Co., Ltd has been completed. Hangzhou Tuya Information Technology Co., Ltd continues qualifying as a high-tech enterprise and is entitled to enjoy the 15% beneficial tax rate for the years ended December 31, 2022, 2023 and 2024. The enterprise income tax is calculated based on the entity's global income as determined under PRC tax laws and accounting standards.

We are subject to VAT on the products sold and services provided. We are also subject to surcharges on VAT payments in accordance with PRC law. The PRC Provisional Regulations on Value-Added Tax were promulgated by the State Council on December 13, 1993, which became effective on January 1, 1994 and were subsequently amended from time to time. The Detailed Rules for the Implementation of the PRC Provisional Regulations on Value-Added Tax (2011 Revision) was promulgated by the MOF on December 25, 1993 and subsequently amended on December 15, 2008 and October 28, 2011. On November 19, 2017, the State Council promulgated the Decisions on Abolishing the PRC Provisional Regulations on Business Tax and Amending the PRC Provisional Regulations on Value-Added Tax. Pursuant to these regulations, rules and decisions, all enterprises and individuals engaged in sale of goods, provision of processing, repair, and replacement services, sales of services, intangible assets, real property, and the importation of goods within the PRC territory are VAT taxpayers. On March 20, 2019, the MOF, the SAT, and the General Administration of Customs jointly issued the Announcement on Relevant Policies on Deepen the Reform of Value-Added Tax. Pursuant to this announcement, the generally applicable VAT rates are simplified as 13%, 9%, 6%, and 0%, which became effective on April 1, 2019, and the VAT rate applicable to the small-scale taxpayers is 3%.

As a Cayman Islands holding company, we may receive dividends from our PRC subsidiaries through Tuya (HK) Limited. The PRC EIT Law and its implementing rules provide that dividends paid by a PRC entity to a nonresident enterprise for income tax purposes is subject to PRC withholding tax at a rate of 10%, and may be subject to reduction by an applicable tax treaty with China. Pursuant to the Arrangement between Mainland China and the Hong Kong Special Administrative Region on the Avoidance of Double Taxation and the Prevention of Fiscal Evasion, which was signed on August 21, 2006, the withholding tax rate in respect to the payment of dividends by a PRC enterprise to a Hong Kong enterprise may be reduced to 5%from a standard rate of 10% if the Hong Kong enterprise (i) directly holds at least 25% of the PRC enterprise, (ii) is a tax resident in Hong Kong and (iii) could be recognized as a Beneficial Owner of the dividend from PRC tax perspective. Pursuant to the Notice of the State Administration of Taxation on the Issues concerning the Application of the Dividend Clauses of Tax Agreements, (the "Guoshuihan [2009] 81"), a Hong Kong resident enterprise must meet the following conditions, among others, in order to apply the reduced withholding tax rate: (i) it must be a company; (ii) it must directly own the required percentage of equity interests and voting rights in the PRC resident enterprise; and (iii) it must have directly owned such required percentage in the PRC resident enterprise throughout the 12 months prior to receiving the dividends. In October 2019, the State Administration of Taxation issued Announcement of the State Taxation Administration on Issuing the Measures for Non-resident Taxpayers' Enjoyment of Treaty Benefits (the "SAT Circular 35"), which became effective on January 1, 2020. SAT Circular 35 provides that nonresident enterprises are not required to obtain pre-approval from the relevant tax authority in order to enjoy the reduced withholding tax. Instead, nonresident enterprises and their withholding agents may, by self-assessment and on confirmation that the prescribed criteria to enjoy the tax treaty benefits are met, directly apply the reduced withholding tax rate, and file necessary forms and supporting documents when performing tax filings, which will be subject to post-tax filing examinations by the relevant tax authorities. Accordingly, Tuya (HK) Limited may be able to benefit from the 5% withholding tax rate for the dividends it receives from its PRC subsidiaries, if it satisfies the conditions prescribed under Guoshuihan [2009] 81 and other relevant tax rules and regulations. However, according to Guoshuihan [2009] 81 and SAT Circular 35, if the relevant tax authorities consider the transactions or arrangements we have are for the primary purpose of enjoying a favorable tax treatment, the relevant tax authorities may adjust the favorable withholding tax in the future.

If our holding company in the Cayman Islands or any of our subsidiaries outside of China were deemed to be a "resident enterprise" under the PRC EIT Law, it would be subject to enterprise income tax on its worldwide income at a rate of 25%. See "Item 3. Key Information—3.D. Risk Factors—Risks Related to Doing Business in China—If we are classified as a PRC resident enterprise for PRC enterprise income tax purposes, such classification could result in unfavorable tax consequences to us and our non-PRC shareholders and ADS holders."

Material U.S. Federal Income Tax Considerations

The following are material U.S. federal income tax consequences to the U.S. Holders described below of owning and disposing of the ADSs or Class A ordinary shares, but it does not purport to be a comprehensive description of all of the tax considerations that may be relevant to a particular person's decision to hold ADSs. This discussion applies only to a U.S. Holder that holds the ADSs or Class A ordinary shares as capital assets for U.S. federal income tax purposes. In addition, it does not describe all of the tax consequences that may be relevant in light of a U.S. Holder's particular circumstances, including alternative minimum tax or Medicare contribution tax consequences, and tax consequences applicable to U.S. Holders subject to special rules, such as:

- certain financial institutions;
- dealers or traders in securities that use a mark-to-market method of tax accounting;
- persons holding ADSs or Class A ordinary shares as part of a straddle, conversion transaction, integrated transaction or similar transaction;
- persons whose functional currency for U.S. federal income tax purposes is not the U.S. dollar;
- entities classified as partnerships for U.S. federal income tax purposes (and investors therein);

- tax-exempt entities, "individual retirement accounts" or "Roth IRAs";
- persons that own or are deemed to own 10% or more of our stock by vote or value;
- persons holding ADSs or Class A ordinary shares in connection with a trade or business conducted outside the United States; or
- persons who acquired our ADSs or Class A ordinary shares pursuant to the exercise of an employee stock option or otherwise as compensation.

If an entity that is classified as a partnership for U.S. federal income tax purposes owns ADSs or Class A ordinary shares, the U.S. federal income tax treatment of its partners will generally depend on the status of its partners and the activities of the partnership. Partnerships owning ADSs or Class A ordinary shares and their partners should consult their tax advisers as to the particular U.S. federal income tax consequences of owning and disposing of ADSs or Class A ordinary shares.

This discussion is based on the Internal Revenue Code of 1986, as amended (the "Code"), administrative pronouncements, judicial decisions, final, temporary and proposed Treasury regulations and the income tax treaty between the United States and the PRC (the "Treaty"), all as of the date hereof, any of which is subject to change, possibly with retroactive effect. This discussion assumes that each obligation under the deposit agreement and any related agreement will be performed in accordance with its terms.

For purposes of this discussion, a "U.S. Holder" is a person eligible for Treaty benefits that is, for U.S. federal income tax purposes a beneficial owner of ADSs or Class A ordinary shares and:

- a citizen or individual resident of the United States;
- a corporation, or other entity taxable as a corporation, created or organized in or under the laws of the United States, any state therein or the District of Columbia; or
- an estate or trust the income of which is subject to U.S. federal income taxation regardless of its source.

Treasury regulations that apply to taxable years beginning on or after December 28, 2021 (the "Foreign Tax Credit Regulations") may in some circumstances prohibit a U.S. person from claiming a foreign tax credit with respect to certain non-U.S. taxes that are not creditable under applicable income tax treaties. Accordingly, U.S. investors that are not eligible for Treaty benefits should consult their tax advisers regarding the creditability or deductibility of any PRC taxes imposed on dividends on, or dispositions of, the ADSs or Class A ordinary shares. This discussion does not apply to investors in this special situation.

In general, a U.S. Holder that owns ADSs will be treated as the owner of the underlying Class A ordinary shares represented by those ADSs for U.S. federal income tax purposes. Accordingly, no gain or loss will be recognized if a U.S. Holder exchanges ADSs for the underlying Class A ordinary shares represented by those ADSs.

This discussion does not address the effects of any state, local or non-U.S. tax laws, or any U.S. federal taxes other than income taxes (such as U.S. federal estate or gift tax consequences). U.S. Holders should consult their tax advisers concerning the U.S. federal, state, local and non-U.S. tax consequences of owning and disposing of ADSs or Class A ordinary shares in their particular circumstances.

Passive Foreign Investment Company Rules

In general, a non-U.S. corporation is a passive foreign investment company (a "PFIC") for any taxable year in which (i) 75% or more of its gross income consists of passive income or (ii) 50% or more of the average value of its assets (generally determined on a quarterly basis) consists of assets that produce, or are held for the production of, passive income. For purposes of the above calculations, a non-U.S. corporation that owns (or is treated as owning for U.S. federal income tax purposes), directly or indirectly, at least 25% by value of the shares of another corporation is treated as if it held its proportionate share of the assets of the other corporation and received directly its proportionate share of the income of the other corporation. Passive income generally includes dividends, interest, rents, royalties and certain gains. Cash is generally a passive asset for these purposes. The value of a company's goodwill is an active asset under the PFIC rules to the extent attributable to activities that produce active income.

Based on the composition of our income and assets and the estimated value of our assets, including goodwill, which is based on the average price of the ADSs during 2021, we believe that we were not a PFIC for our taxable year ended December 31, 2021. However, our PFIC status for any taxable year is an annual factual determination that can be made only after the end of that year and depends on the composition of our income and assets and the value of our assets from time to time. We hold a substantial amount of cash and while that continues to be the case our PFIC status for any taxable year will depend primarily on the average value of our goodwill. The value of our goodwill may be determined, in large part, by reference to our market capitalization. Because our market capitalization has declined substantially since our initial public offering, if the value of our goodwill is determined by reference to our market capitalization and the market price of the ADSs does not increase sufficiently, there is a significant risk that we will be a PFIC for our taxable year 2022, and possibly future taxable years. Moreover, it is not entirely clear how the contractual arrangements between us and the VIE will be treated for purposes of the PFIC rules, and we may be or become a PFIC if the VIE is not treated as owned by us for these purposes. For these reasons, there can be no assurance that we will not be a PFIC for our current or any future taxable year.

If we are a PFIC for any taxable year and any entity in which we own or are treated as owning equity interests (including the VIE) is also a PFIC (any such entity, a "Lower-tier PFIC"), a U.S. Holder will be deemed to own a proportionate amount (by value) of the shares of each Lower-tier PFIC and will be subject to U.S. federal income tax according to the rules described in the subsequent paragraph on (i) certain distributions by a Lower-tier PFIC and (ii) dispositions of shares of Lower-tier PFICs, in each case as if the U.S. Holder held such shares directly, even though the U.S. Holder will not receive the proceeds of those distributions or dispositions.

In general, if we are a PFIC for any taxable year during which a U.S. Holder holds ADSs or Class A ordinary shares, gain recognized by such U.S. Holder on a sale or other disposition (including certain pledges) of its ADSs or Class A ordinary shares will be allocated ratably over that U.S. Holder's holding period. The amounts allocated to the taxable year of the sale or disposition and to any year before we became a PFIC will be taxed as ordinary income. The amount allocated to each other taxable year will be subject to tax at the highest rate in effect for individuals or corporations, as appropriate, for that taxable year, and an interest charge will be imposed on the resulting tax liability for each such year. Furthermore, to the extent that distributions received by a U.S. Holder in any year on its ADSs or Class A ordinary shares exceed 125% of the average of the annual distributions on the ADSs or Class A ordinary shares received during the preceding three taxable years or the U.S. Holder's holding period for the ADSs or Class A ordinary shares, whichever is shorter, such distributions will be subject to taxation in the same manner. If we are a PFIC for any taxable year during which a U.S. Holder owned ADSs or Class A ordinary shares, we will generally continue to be treated as a PFIC with respect to the U.S. Holder for all succeeding years during which the U.S. Holder owned ADSs or Class A ordinary shares, even if we cease to meet the threshold requirements for PFIC status, unless the U.S. Holder makes a timely "deemed sale" election, in which case any gain on the deemed sale will be taxed under the PFIC rules described above.

Alternatively, if we are a PFIC and if the ADSs are "regularly traded" on a "qualified exchange," as defined in applicable Treasury regulations, a U.S. Holder of ADSs could make a mark-to-market election that will result in tax treatment different from the general tax treatment for PFICs described in the preceding paragraph. The ADSs will be treated as "regularly traded" for any calendar year in which more than a *de minimis* quantity of the ADSs are traded on a qualified exchange on at least 15 days during each calendar quarter. The NYSE, where our ADSs are listed, is a qualified exchange for this purpose. If a U.S. Holder of ADSs makes the mark-to-market election, the U.S. Holder generally will recognize as ordinary income any excess of the fair market value of the ADSs at the end of each taxable year in which we are a PFIC over their adjusted tax basis, and will recognize an ordinary loss in respect of any excess of the adjusted tax basis of the ADSs over their fair market value at the end of the taxable year (but only to the extent of the net amount of income previously included as a result of the mark-to-market election). If a U.S. Holder makes the election, the U.S. Holder's tax basis in the ADSs will be adjusted to reflect the income or loss amounts recognized. Any gain recognized on the sale or other disposition of ADSs in a year when the Company is a PFIC will be treated as ordinary income and any loss will be treated as an ordinary loss (but only to the extent of the net amount of income previously included as a result of the mark-to-market election, with any excess treated as capital loss). If a U.S. Holder makes the mark-to-market election, distributions paid on ADSs will be treated as discussed under "—Taxation of Distributions" above, but subject to the discussion in the following paragraph. There is no law, regulation or administrative guidance that provides for a right to apply a mark-to-market treatment to any Lower-tier PFIC that is not publicly traded. Therefore, if we are a PFIC for any taxable year, U.S. Holders could be subject to the general PFIC rules described in the preceding paragraph with respect to any Lower-tier PFIC even if they made a mark-to-market election with respect to us.

If we are a PFIC (or with respect to a particular U.S. Holder are treated as a PFIC) for a taxable year in which we pay a dividend or for the prior taxable year, the favorable tax rate described above with respect to dividends paid to certain non-corporate U.S. Holders will not apply.

We do not intend to provide the information that will otherwise enable U.S. Holders to make a "qualified electing fund election," which would result in alternative treatment if we are a PFIC for any taxable year.

If we are a PFIC for any taxable year during which a U.S. Holder owned any ADSs or Class A ordinary shares, the U.S. Holder will generally be required to file annual reports with the Internal Revenue Service.

U.S. Holders should consult their tax advisers regarding the determination of whether we are a PFIC for any taxable year and the potential application of the PFIC rules to their ownership of ADSs or Class A ordinary shares.

Taxation of Distributions

This discussion is subject to the discussion under "—Passive Foreign Investment Company Rules" above.

Distributions paid on the ADSs or Class A ordinary shares, other than certain pro rata distributions of ADSs or Class A ordinary shares, will be treated as dividends to the extent paid out of our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Because we do not maintain calculations of our earnings and profits under U.S. federal income tax principles, it is expected that distributions generally will be reported to U.S. Holders as dividends. Dividends will not be eligible for the dividends-received deduction generally available to U.S. corporations under the Code. Subject to applicable limitations, dividends paid by "qualified foreign corporations" to certain non-corporate U.S. investors are taxable at the favorable rates applicable to long-term capital gains. A non-U.S. corporation is treated as a qualified foreign corporation with respect to dividends paid on stock that is readily tradable on a securities market in the United States, such as the NYSE, where the ADSs are listed. The favorable rate does not apply if the non-U.S. corporation is a PFIC for the taxable year in which the dividend is paid or the preceding taxable year. Non-corporate U.S. Holders should consult their tax advisers to determine whether the favorable rate will apply to dividends they receive and whether they are subject to any special rules that limit their ability to be taxed at this favorable rate.

Dividends will be included in a U.S. Holder's income on the date of the U.S. Holder's, or in the case of ADSs, the depositary's, receipt. The amount of any dividend income paid in foreign currency will be the U.S. dollar amount calculated by reference to the spot rate in effect on the date of receipt, regardless of whether the payment is in fact converted into U.S. dollars on such date. If the dividend is converted into U.S. dollars on the date of receipt, a U.S. Holder generally should not be required to recognize foreign currency gain or loss in respect of the amount received. A U.S. Holder may have foreign currency gain or loss if the dividend is converted into U.S. dollars after the date of receipt.

Dividends will be treated as foreign-source income for foreign tax credit purposes. As described in "—People's Republic of China Taxation," dividends paid by us may be subject to PRC withholding tax. For U.S. federal income tax purposes, the amount of the dividend income will include any amounts withheld in respect of PRC withholding tax. Subject to applicable limitations, which vary depending upon the U.S. Holder's circumstances, PRC taxes withheld from dividend payments (at a rate not exceeding the applicable rate provided in the Treaty) generally will be creditable against a U.S. Holder's U.S. federal income tax liability. The rules governing foreign tax credits are complex and U.S. Holders should consult their tax advisers regarding the creditability of foreign taxes in their particular circumstances. In lieu of claiming a credit, a U.S. Holder may elect to deduct creditable PRC taxes in computing its taxable income, subject to applicable limitations. An election to deduct foreign taxes instead of claiming foreign tax credits applies to all creditable foreign taxes paid or accrued in the relevant taxable year.

Sale or Other Taxable Disposition of ADSs or Class A Ordinary Shares

This discussion is subject to the discussion under "—Passive Foreign Investment Company Rules" above.

For U.S. federal income tax purposes, gain or loss realized on the sale or other taxable disposition of ADSs or Class A ordinary shares will be capital gain or loss, and will be long-term capital gain or loss if the U.S. Holder held the ADSs or Class A ordinary shares for more than one year. The amount of the gain or loss will equal the difference between the U.S. Holder's tax basis in the ADSs or Class A ordinary shares disposed of and the amount realized on the disposition, in each case as determined in U.S. dollars.

As described in "—People's Republic of China Taxation" above, gains on the sale of ADSs or Class A ordinary shares may be subject to PRC taxes if we are treated as a PRC resident enterprise for PRC tax purposes. Under the Code, capital gains of U.S. persons are generally treated as U.S.-source income. However, a U.S. Holder may be able to elect to treat the gain as foreign-source income under the Treaty and claim foreign tax credit in respect of any PRC tax on dispositions. The Foreign Tax Credit Regulations generally preclude a U.S. Holder from claiming a foreign tax credit with respect to PRC income taxes on gains from dispositions of ADSs or Class A ordinary shares if the U.S. Holder does not elect to apply the benefits of the Treaty. However, in that case it is possible that any PRC taxes on disposition gains may either be deductible or reduce the amount realized on the disposition. The rules governing foreign tax credits and deductibility of foreign taxes are complex. U.S. Holders should consult their tax advisers regarding the consequences of the imposition of any PRC tax on disposition gains, including the Treaty's resourcing rule, any reporting requirements with respect to a Treaty-based return position and the creditability or deductibility of the PRC tax on disposition gains in their particular circumstances (including any applicable limitations).

Information Reporting and Backup Withholding

Payments of dividends and sales proceeds from the sale or exchange of our ADSs or Class A ordinary shares that are made within the United States or through certain U.S.-related financial intermediaries generally are subject to information reporting, and may be subject to backup withholding, unless (i) the U.S. Holder is a corporation or other exempt recipient or (ii) in the case of backup withholding, the U.S. Holder provides a correct taxpayer identification number and certifies that it is not subject to backup withholding, generally on Internal Revenue Service Form W-9. Backup withholding is not an additional tax. The amount of any backup withholding from a payment to a U.S. Holder will be allowed as a credit against the U.S. Holder's U.S. federal income tax liability and may entitle it to a refund, provided that the required information is timely furnished to the Internal Revenue Service.

Certain U.S. Holders who are individuals (or certain specified entities) may be required to report information relating to their ownership of ADSs or Class A ordinary shares, or non-U.S. accounts through which ADSs or Class A ordinary shares are held. U.S. Holders should consult their tax advisers regarding their reporting obligations with respect to the ADSs or Class A ordinary shares.

A holder that is not a U.S. Holder may be required to comply with certification and identification procedures in order to establish its exemption from information reporting and backup withholding.

10.F. Dividends and Paying Agents

Not applicable.

10.G. Statement by Experts

Not applicable.

10.H. Documents on Display

We previously filed with the SEC registration statement on Form F-1 (File No. 333-253575), as amended, to register our Class A ordinary shares in relation to our initial public offering. We also filed with the SEC related registration statement on Form F-6 (File No. 333-254092) to register the ADSs representing our Class A ordinary shares.

We are subject to the periodic reporting and other informational requirements of the Exchange Act as applicable to foreign private issuers. Under the Exchange Act, we are required to file reports and other information with the SEC. Specifically, we are required to file annually a Form 20-F within four months after the end of each fiscal year. Copies of reports and other information, when so filed with the SEC, can be inspected and copied at the public reference facilities maintained by the SEC at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You can request copies of these documents, upon payment of a duplicating fee, by writing to the SEC. The SEC also maintains a web site at *www.sec.gov* that contains reports, proxy and information statements, and other information regarding registrants that make electronic filings with the SEC using its EDGAR system. As a foreign private issuer, we are exempt from the rules of the Exchange Act prescribing the furnishing and content of quarterly reports and proxy statements, and our executive officers, directors and principal shareholders are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Exchange Act. In addition, we are not required under the Exchange Act to file periodic reports and financial statements with the SEC as frequently or as promptly as U.S. companies whose securities are registered under the Exchange Act.

We will furnish The Bank of New York Mellon, the depositary of the ADSs, with our annual reports, which will include a review of operations and annual audited consolidated financial statements prepared in conformity with U.S. GAAP, and all notices of shareholders' meetings and other reports and communications that are made generally available to our shareholders. The depositary will make such notices, reports and communications available to holders of ADSs and, upon our request, will mail to all record holders of ADSs the information contained in any notice of a shareholders' meeting received by the depositary from us.

I. Subsidiary Information

Not applicable.

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

Our exposure to interest rate risk primarily relates to the interest income generated by excess cash, which is mostly held in interest-bearing bank deposits. We have not used any derivative financial instruments to manage our interest risk exposure. Interest-earning instruments carry a degree of interest rate risk. We have not been exposed, nor do we anticipate being exposed, to material risks due to changes in interest rates. However, our future interest income may be lower than expected due to changes in market interest rates.

Foreign Exchange Risk

We currently derive a significant majority of our revenues from IoT PaaS which, in turn, are generated primarily through our contracts with OEMs located in the PRC. These revenues are predominantly denominated in RMB. A substantial portion of our expenses are also denominated in RMB. Our reporting and functional currency is the U.S. dollar. The financial statements of our subsidiaries and consolidated affiliated entities using functional currencies other than U.S. dollar, such as RMB, are translated to the U.S. dollar. As a result, as RMB depreciates or appreciates against the U.S. dollar, our revenues presented in U.S. dollars will be negatively or positively affected.

We do not believe that we currently have any significant direct foreign exchange risk arising from our operating activities. Although our exposure to foreign exchange risks should be limited in general, the value of your investment in the ADSs will be affected by the exchange rate between U.S. dollar and RMB because the value of our business is effectively denominated in RMB, while the ADSs representing our Class A ordinary shares will be traded in U.S. dollars.

The value of the RMB against the U.S. dollar and other currencies is affected by changes in China's political and economic conditions and by China's foreign exchange policies, among other things. With the development of the foreign exchange market and progress towards interest rate liberalization and RMB internationalization, the PRC government have announced in the past, and may announce in the future, changes to the exchange rate system and there is no guarantee that the RMB will not appreciate or depreciate significantly in value against the U.S. dollar in the future. It is difficult to predict how market forces or PRC or U.S. government policy may impact the exchange rate between the RMB and the U.S. dollar in the future.

To the extent that we need to convert U.S. dollars into RMB for our operations, appreciation of RMB against the U.S. dollar would reduce the RMB amount we receive from the conversion. Conversely, if we decide to convert RMB into U.S. dollars for the purpose of making payments for dividends on our ordinary shares or ADSs, servicing our outstanding debt, or for other business purposes, appreciation of the U.S. dollar against the RMB would reduce the U.S. dollar amounts available to us.

As of December 31, 2021, we had Renminbi-denominated cash and cash equivalents of RMB254.8 million (US$40.0 million) , and U.S. dollar-denominated cash, cash equivalents of US$922.7 million.

Inflation Risk

Since our inception, inflation in China has not materially impacted our results of operations. According to the National Bureau of Statistics of China, the year-over-year percent changes in the consumer price index for 2019, 2020 and 2021 were increases of 2.9%, 2.5% and 0.9%, respectively. Although we have not in the past been materially affected by inflation since our inception, we can provide no assurance that we will not be affected in the future by higher rates of inflation in China.

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

12.A. Debt Securities

Not applicable.

12.B. Warrants and Rights

Not applicable.

12.C. Other Securities

Not applicable.

12.D. American Depositary Shares

Fees and Expenses

An ADS holder will be required to pay the following fees under the terms of the deposit agreement:

Persons depositing or withdrawing shares or ADS holders must pay:	For:
● US$5.00 (or less) per 100 ADSs (or portion of 100 ADSs)	● Issuance of ADSs, including issuances resulting from a distribution of shares or rights or other property ● Cancelation of ADSs for the purpose of withdrawal, including if the deposit agreement terminates
● US$0.05 (or less) per ADS	● Any cash distribution to ADS holders
● A fee equivalent to the fee that would be payable if securities distributed to you had been shares and the shares had been deposited for issuance of ADSs	● Distribution of securities distributed to holders of deposited securities (including rights) that are distributed by the depositary to ADS holders
● US$0.05 (or less) per ADS per calendar year	● Depositary services
● Registration or transfer fees	● Transfer and registration of shares on our share register to or from the name of the depositary or its agent when you deposit or withdraw shares
● Expenses of the depositary	● Cable and facsimile transmissions (when expressly provided in the deposit agreement) ● Converting foreign currency to U.S. dollars
● Taxes and other governmental charges the depositary or the custodian has to pay on any ADSs or shares underlying ADSs, such as stock transfer taxes, stamp duty or withholding taxes	● As necessary
● Any charges incurred by the depositary or its agents for servicing the deposited securities	● As necessary

The depositary collects its fees for delivery and surrender of ADSs directly from investors depositing shares or surrendering ADSs for the purpose of withdrawal or from intermediaries acting for them. The depositary collects fees for making distributions to investors by deducting those fees from the amounts distributed or by selling a portion of distributable property to pay the fees. The depositary may collect its annual fee for depositary services by deduction from cash distributions or by directly billing investors or by charging the book-entry system accounts of participants acting for them. The depositary may collect any of its fees by deduction from any cash distribution payable (or by selling a portion of securities or other property distributable) to ADS holders that are obligated to pay those fees. The depositary may generally refuse to provide fee-attracting services until its fees for those services are paid.

From time to time, the depositary may make payments to us to reimburse us for costs and expenses generally arising out of establishment and maintenance of the ADS program, waive fees and expenses for services provided to us by the depositary or share revenue from the fees collected from ADS holders. In performing its duties under the deposit agreement, the depositary may use brokers, dealers, foreign currency dealers or other service providers that are owned by or affiliated with the depositary and that may earn or share fees, spreads or commissions. In 2021, excluding withholding tax, we received US$13.1 million net reimbursement from The Bank of New York Mellon, for the expenses incurred in connection with our ADR program.

The depositary may convert currency itself or through any of its affiliates and, in those cases, acts as principal for its own account and not as agent, advisor, broker or fiduciary on behalf of any other person and earns revenue, including, without limitation, transaction spreads, that it will retain for its own account. The revenue is based on, among other things, the difference between the exchange rate assigned to the currency conversion made under the deposit agreement and the rate that the depositary or its affiliate receives when buying or selling foreign currency for its own account. The depositary makes no representation that the exchange rate used or obtained in any currency conversion under the deposit agreement will be the most favorable rate that could be obtained at the time or that the method by which that rate will be determined will be the most favorable to ADS holders, subject to the depositary's obligations under the deposit agreement. The methodology used to determine exchange rates used in currency conversions is available upon request.

Payment of Taxes

You will be responsible for any taxes or other governmental charges payable on your ADSs or on the deposited securities represented by any of your ADSs. The depositary may refuse to register any transfer of your ADSs or allow you to withdraw the deposited securities represented by your ADSs until those taxes or other charges are paid. It may apply payments owed to you or sell deposited securities represented by your ADSs to pay any taxes owed and you will remain liable for any deficiency. If the depositary sells deposited securities, it will, if appropriate, reduce the number of ADSs to reflect the sale and pay to ADS holders any proceeds, or send to ADS holders any property, remaining after it has paid the taxes.

PART II

ITEM 13. ITEM DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

14.A. – 14.D. Material Modifications to the Rights of Security Holders

See "Item 10. Additional Information" for a description of the rights of shareholders, which remain unchanged.

14.E. Use of Proceeds

The following "Use of Proceeds" information relates to the registration statement on Form F-1 (File No. 333-253575) as amended (the "IPO Registration Statement"), which registered 43,590,000 Class A ordinary shares represented by 43,590,000 ADSs issued and sold by us, and the underwriters' exercise of their option to purchase from us 1,486,479 additional ADSs representing 1,486,479 Class A ordinary shares, at a public offering price of US$21.00 per ADS. The registration statement was declared effective by the SEC on March 17, 2021, for our initial public offering, which closed in March 2021. Morgan Stanley & Co. LLC, BofA Securities, Inc. and China International Capital Corporation Hong Kong Securities Limited were the representatives of the underwriters.

We received net proceeds of US$904.7 million from our initial public offering in March 2021 and the underwriters' exercise of over-allotment option. Our expenses incurred and paid to others in connection with the issuance and distribution of the ADSs in our offering totaled US$41.9 million, which included US$37.9 million for underwriting discounts and commissions and US$4.0 million for other expenses. None of the transaction expenses included payments to directors or officers of our company or their associates, persons owning more than 10% or more of our equity securities or our affiliates.

For the period from March 17, 2021, the date that the registration statement on Form F-1 was declared effective by the SEC, to December 31, 2021, we used approximately US$101.2 million of the net proceeds received from our initial public offering for the purposes as disclosed in the IPO Registration Statement (i.e. research and development; investment in technology infrastructure; marketing and branding; other capital expenditures; and other general corporate purposes), as well as repurchases of ADSs from the open market. None of the net proceeds we received from the initial public offering were paid, directly or indirectly, to any of our directors or officers or their associates, persons owning 10% or more of our equity securities or our affiliates. We intend to use the remainder of the net proceeds from our initial public offering for the foregoing purposes.

ITEM 15. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, has performed an evaluation of the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act) as of the end of the period covered by this report, as required by Rule 13a-15(b) under the Exchange Act. Based upon that evaluation, our management has concluded that, due to the outstanding material weakness described blow, as of December 31, 2021, our disclosure controls and procedures were not effective in ensuring that the information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and that the information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control over Financial Reporting

This annual report on Form 20-F does not include a report of management's assessment regarding internal control over financial reporting due to a transition period established by rules of the SEC for newly public companies.

Attestation Report of the Registered Public Accounting Firm

Since we are an "emerging growth company" as defined under the JOBS Act, we are exempt from the requirement to comply with the auditor attestation requirements that our independent registered public accounting firm attest to and report on the effectiveness of our internal control structure and procedures for financial reporting.

Internal Control over Financial Reporting

In the course of preparing and auditing our consolidated financial statements for the year ended December 31, 2019, we and our independent registered public accounting firm identified a material weakness in our internal control over financial reporting as of December 31, 2019. The material weakness in our internal control over financial reporting has not been remediated as of December 31, 2021. As defined in the standards established by the Public Company Accounting Oversight Board of the United States, a "material weakness" is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis.

The material weakness identified is our company's lack of sufficient and competent financial reporting and accounting personnel with appropriate knowledge and experience to address complex U.S. GAAP accounting issues and to prepare and review financial statements and related disclosures in accordance with U.S. GAAP and SEC reporting requirement.

To remedy our identified material weakness, we have started to undertake steps to strengthen our internal control over financial reporting, including: (i) hiring more qualified resources including competent financial controllers and financial reporting managers, equipped with relevant U.S. GAAP and SEC reporting experiences and qualifications to strengthen the financial reporting function and to set up financial and system control framework, (ii) implementing regular and continuous U.S. GAAP accounting and financial reporting training programs for our accounting and financial reporting personnel, (iii) formalizing the procedures and controls regarding the financial reporting process and developing and implementing a comprehensive set of U.S. GAAP policies and standardized financial closing and reporting procedures, including an accounting manual and financial closing and reporting checklists, to allow early detection, prevention and resolution of potential misstatements, (iv) enhancing an internal audit function to ensure proper design and implementation of our accounting policies and financial reporting procedures, and (v) providing financial support to our accounting and financial reporting personnel to take recognized accounting qualification exams.

Since our initial public offering, we have become subject to the Sarbanes-Oxley Act of 2002. Section 404 of the Sarbanes-Oxley Act requires that we include a report from management on the effectiveness of our internal control over financial reporting in our annual report on Form 20-F for the fiscal year ending December 31, 2022. In addition, once we cease to be an "emerging growth company" as such term is defined in the JOBS Act, our independent registered public accounting firm must attest to and report on the effectiveness of our internal control over financial reporting. It is possible that, had we performed a formal assessment of our internal control over financial reporting or had our independent registered public accounting firm perform an audit of our internal control over financial reporting, additional internal control deficiencies may have been identified. See "Item 3. Key Information—3.D. Risk Factors—Risks Related to Our Business and Industry— If we fail to maintain proper and effective internal control over financial reporting, we may be unable to accurately or timely report our results of operations, meet our reporting obligations or prevent fraud, and investor confidence and the market price of our ADSs may be materially and adversely affected."

Changes in Internal Control over Financial Reporting

Other than as described above, there were no changes in our internal controls over financial reporting that occurred during the period covered by this annual report that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 16.A. AUDIT COMMITTEE FINANCIAL EXPERT

Our board of directors has determined that Jing Hong, an independent director and a member of our audit committee, qualifies as an "audit committee financial expert" within the meaning of the SEC rules and possesses financial sophistication within the meaning of Listing Rules of the NYSE. Jing Hong satisfies the "independence" requirements of Rule 10A-3 under the Securities Exchange Act of 1934, as amended, and Section 303A of the Corporate Governance Rules of the NYSE.

ITEM 16.B. CODE OF ETHICS

Our board of directors has adopted a code of business conduct and ethics that applies to all of our directors, officers, employees, including certain provisions that specifically apply to our principal executive officer, principal financial officer, principal accounting officer or controller and any other persons who perform similar functions for us. We have filed our code of business conduct and ethics as Exhibit 99.1 to the registration statement on Form F-1 (File No. 333-253575), as amended, initially filed with the SEC on February 26, 2021, and posted a copy of our code of business conduct and ethics on our website at *https://ir.tuya.com*. We hereby undertake to provide to any person without charge, a copy of our code of business conduct and ethics within ten working days after we receive such person's written request.

ITEM 16.C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Auditor Fees

The following table sets forth the aggregate fees by categories specified below in connection with certain professional services rendered by PricewaterhouseCoopers Zhong Tian LLP, our independent registered public accounting firm, for the periods indicated.

	Year Ended December 31,	
	2020	2021
	US$	US$
	(in thousands)	
Services		
Audit Fees[1]	1,500	1,800
Total	**1,500**	**1,800**

(1) "Audit Fees" refer to the aggregate fees billed in each of the fiscal years listed for professional services rendered by our principal auditors for the audit of our annual financial statements and assistance with and review of documents filed with the SEC. In 2020 and 2021, the audit refers to financial audit and services that are normally provided by our principal auditor in connection with regulatory filings for those fiscal years.

The policy of our audit committee is to pre-approve all audit and non-audit services provided by PricewaterhouseCoopers Zhong Tian LLP, our independent registered public accounting firm, including audit services and other services as described above, other than those for *de minimis* services which are approved by the audit committee prior to the completion of the audit.

ITEM 16.D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

ITEM 16.E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

On August 30, 2021, we announced a share repurchase program approved by our board of directors, under which we may repurchase up to US$200 million of our Class A ordinary shares in the form of ADSs during a twelve-month period. Our proposed repurchases may be made from time to time through open market transactions at prevailing market prices, in privately negotiated transactions, in block trades and/or through other legally permissible means, depending on the market conditions and in accordance with applicable rules and regulations. The timing and dollar amount of repurchase transactions will be subject to the SEC Rule 10b-18 and/or Rule 10b5-1 requirements. Our board of directors will review the share repurchase program periodically, and may authorize adjustment of its terms and size or suspend or discontinue the program.

As of April 12, 2022, we had repurchased a total of approximately 12,796,634 ADSs under this share repurchase program. The table below is a summary of the shares repurchased by us from August 30, 2021 to April 12, 2022. All shares were repurchased in the open market pursuant to the share repurchase program announced on August 30, 2021.

Period	Total Number of ADSs Purchased	Average Price Paid Per ADS	Total Number of ADSs Purchased as Part of the Publicly Announced Plan	Approximate Dollar Value of ADSs that May Yet Be Purchased Under the Plan (in US$)
August 2021	—	—	—	200,000,000
September 2021	2,754,982	10.35	2,754,982	171,486,943
October 2021	—	—	—	171,486,943
November 2021	1,156,537	5.40	1,156,537	165,239,597
December 2021	3,096,750	6.07	3,096,750	146,437,540
January 2022	3,064,777	5.25	3,064,777	130,355,026
February 2022	1,014,977	5.21	1,014,977	125,063,394
March 2022	806,757	4.49	806,757	121,437,541
April 2022	901,854	3.02	901,854	118,715,963

ITEM 16.F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

Not applicable.

ITEM 16.G. CORPORATE GOVERNANCE

As a Cayman Islands exempted company listed on the NYSE, we are subject to corporate governance listing standards of NYSE. However, NYSE rules permit a foreign private issuer like us to follow the corporate governance practices of its home country. Certain corporate governance practices in the Cayman Islands, which is our home country, may differ significantly from the NYSE corporate governance listing standards. We currently intend to follow Cayman Islands corporate governance practices in lieu of the corporate governance requirements of the NYSE that listed companies must have a majority of independent directors and that the audit committee consist of at least three members. To the extent that we choose to follow home country practice in the future, our shareholders may be afforded less protection than they otherwise would enjoy under NYSE corporate governance listing standards applicable to U.S. domestic issuers. See "Item 3. Key Information—3.D. Risk Factors—Risks Related to Our ADSs—As an exempted company incorporated in the Cayman Islands, we are permitted to adopt certain home country practices in relation to corporate governance matters that differ significantly from the NYSE corporate governance listing standards. These practices may afford less protection to shareholders than they would enjoy if we complied fully with the NYSE corporate governance listing standards."

ITEM 16.H. MINE SAFETY DISCLOSURE

Not applicable.

ITEM 16.I. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 17. FINANCIAL STATEMENTS

We have elected to provide financial statements pursuant to Item 18.

ITEM 18. FINANCIAL STATEMENTS

The consolidated financial statements of Tuya Inc. are included at the end of this annual report.

ITEM 19. EXHIBITS

Exhibit Number	Description of Document
1.1	Eighth Amended and Restated Memorandum and Articles of Association of the Registrant, as currently in effect (incorporated herein by reference to Exhibit 3.2 to the registration statement on Form F-1 (File No. 333-253575), as amended, initially filed with the SEC on February 26, 2021)
2.1	Form of American Depositary Receipt (included in Exhibit 2.3)
2.2	Registrant's Specimen Certificate for Class A Ordinary Shares (incorporated herein by reference to Exhibit 4.2 to the registration statement on Form F-1 (File No. 333-253575), as amended, initially filed with the SEC on February 26, 2021)
2.3	Form of Deposit Agreement among the Registrant, the depositary and holders of the American Depositary Shares (incorporated herein by reference to Exhibit 1 to the registration statement on Form F-6 (File No. 333-254092), as amended, initially filed with the SEC on March 10, 2021)
2.4*	Description of Registrant's Securities
4.1	The 2015 Equity Incentive Plan (incorporated herein by reference to Exhibit 10.1 to the registration statement on Form F-1 (File No. 333-253575), as amended, initially filed with the SEC on February 26, 2021)
4.2	Form of Indemnification Agreement between the Registrant and its directors and executive officers (incorporated herein by reference to Exhibit 10.2 to the registration statement on Form F-1 (File No. 333-253575), as amended, initially filed with the SEC on February 26, 2021)
4.3	Form of Employment Agreement between the Registrant and its executive officers (incorporated herein by reference to Exhibit 10.3 to the registration statement on Form F-1 (File No. 333-253575), as amended, initially filed with the SEC on February 26, 2021)
4.4	Fifth Amended and Restated Shareholders' Agreement dated September 11, 2019 (incorporated herein by reference to Exhibit 4.4 to the registration statement on Form F-1 (File No. 333-253575), as amended, initially filed with the SEC on February 26, 2021)
4.5*	Amended and Restated Equity Interest Pledge Agreement among Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.), Liaohan (Leo) Chen and Hangzhou Tuya Technology Co., Ltd., originally dated December 23, 2014, amended on August 23, 2019 and amended and restated on January 19, 2022

Exhibit Number	Description of Document
4.6*	Amended and Restated Equity Interest Pledge Agreement among Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.), Peihong Chen and Hangzhou Tuya Technology Co., Ltd., originally dated December 23, 2014, amended on August 23, 2019 and amended and restated on January 19, 2022
4.7*	Amended and Restated Equity Interest Pledge Agreement among Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.), Ruixin Zhou and Hangzhou Tuya Technology Co., Ltd., originally dated December 23, 2014, amended on August 23, 2019 and amended and restated on January 19, 2022
4.8*	Second Amended and Restated Equity Interest Pledge Agreement among Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.), Xueji (Jerry) Wang and Hangzhou Tuya Technology Co., Ltd., originally dated December 23, 2014 and, amended and restated on August 23, 2019 and January 19, 2022, respectively
4.9*	Amended and Restated Equity Interest Pledge Agreement among Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.), Yaona Lin and Hangzhou Tuya Technology Co., Ltd., originally dated December 23, 2014, amended on August 23, 2019 and amended and restated on January 19, 2022
4.10*	Amended and Restated Exclusive Business Cooperation Agreement between Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.) and Hangzhou Tuya Technology Co., Ltd. originally dated December 23, 2014 and amended and restated on January 19, 2022
4.11*	Amended and Restated Exclusive Option Agreement among Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.), Liaohan (Leo) Chen and Hangzhou Tuya Technology Co., Ltd. originally dated December 23, 2014 and amended and restated on January 19, 2022
4.12*	Amended and Restated Exclusive Option Agreement among Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.), Peihong Chen and Hangzhou Tuya Technology Co., Ltd. originally dated December 23, 2014 and amended and restated on January 19, 2022
4.13*	Amended and Restated Exclusive Option Agreement among Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.), Ruixin Zhou and Hangzhou Tuya Technology Co., Ltd. originally dated December 23, 2014 and amended and restated on January 19, 2022
4.14*	Second Amended and Restated Exclusive Option Agreement among Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.), Xueji (Jerry) Wang and Hangzhou Tuya Technology Co., Ltd., originally dated December 23, 2014 and amended and restated on August 23, 2019 and January 19, 2022, respectively
4.15*	Amended and Restated Exclusive Option Agreement among Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.), Yaona Lin and Hangzhou Tuya Technology Co., Ltd. originally dated December 23, 2014 and amended and restated on January 19, 2022

Exhibit Number	Description of Document
4.16*	Power of Attorney executed by Liaohan (Leo) Chen dated January 19, 2022
4.17*	Power of Attorney executed by Peihong Chen dated January 19, 2022
4.18*	Power of Attorney executed by Ruixin Zhou dated January 19, 2022
4.19*	Power of Attorney executed by Xueji (Jerry) Wang dated January 19, 2022
4.20*	Power of Attorney executed by Yaona Lin dated January 19, 2022
4.21*	Spousal Consent executed by spouse of Liaohan (Leo) Chen dated January 19, 2022
4.22*	Spousal Consent executed by spouse of Peihong Chen dated January 19, 2022
4.23*	Spousal Consent executed by spouse of Ruixin Zhou dated January 19, 2022
4.24*	Spousal Consent executed by spouse of Xueji (Jerry) Wang dated January 19, 2022
4.25*	Spousal Consent executed by spouse of Yaona Lin dated January 19, 2022
8.1*	Principal Subsidiaries and Variable Interest Entity of the Registrant
11.1	Code of Business Conduct and Ethics of the Registrant (incorporated herein by reference to Exhibit 99.1 to the registration statement on Form F-1 (File No. 333-253575), as amended, initially filed with the SEC on February 26, 2021)
12.1*	Certification by Principal Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
12.2*	Certification by Principal Accounting Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
13.1**	Certification by Principal Executive Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
13.2**	Certification by Principal Accounting Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
15.1*	Consent of Jia Yuan Law Offices
15.2*	Consent of Maples and Calder (Hong Kong) LLP
15.3*	Consent of PricewaterhouseCoopers Zhong Tian LLP, Independent Registered Public Accounting Firm
15.4*	Consent of China Insights Consultancy
101.INS*	Inline XBRL Instance Document
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document

Exhibit Number	Description of Document
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104*	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Filed herewith

** Furnished herewith

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing its annual report on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

Tuya Inc.

By: /s/ Yao (Jessie) Liu
Name: Yao (Jessie) Liu
Title: Chief Financial Officer

Date: April 28, 2022

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Tuya Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Tuya Inc. and its subsidiaries (the "Company") as of December 31, 2021 and 2020, and the related consolidated statements of comprehensive loss, of changes in shareholders' equity/deficit and of cash flows for each of the three years in the period ended December 31, 2021, including the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021 in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits of these consolidated financial statements in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/PricewaterhouseCoopers Zhong Tian LLP
Shanghai, the People's Republic of China
April 28, 2022

We have served as the Company's auditor since 2020.

TUYA INC.

CONSOLIDATED BALANCE SHEETS

AS OF DECEMBER 31, 2020 AND 2021

(All amounts in US$ thousands ("US$"), except for share and per share data, unless otherwise noted)

	As of December 31,	
	2020	2021
ASSETS		
Current assets:		
Cash and cash equivalents	158,792	963,938
Restricted cash	163	638
Short-term investments	20,976	102,134
Accounts receivable, net	12,316	32,701
Notes receivable	9,126	1,393
Inventories, net	42,267	62,582
Prepayments and other current assets	4,393	27,882
Total current assets	248,033	1,191,268
Non-current assets:		
Property, equipment and software, net	4,374	6,805
Operating lease right-of-use assets, net	12,267	22,181
Long-term investments	920	26,078
Other non-current assets	1,729	1,818
Total non-current assets	19,290	56,882
Total assets	267,323	1,248,150
LIABILITIES, MEZZANINE EQUITY AND SHAREHOLDERS' (DEFICIT)/EQUITY		
Current liabilities (including amounts of the consolidated VIE without recourse to the primary beneficiary of 778 and 1,221 as of December 31, 2020 and 2021, respectively):		
Accounts payable	23,159	12,212
Advance from customers	27,078	31,088
Deferred revenue, current	3,468	9,254
Accruals and other current liabilities	31,738	50,847
Income tax payable	159	—
Lease liabilities, current	6,326	5,697
Total current liabilities	91,928	109,098
Non-current liabilities (including amounts of the consolidated VIE without recourse to the primary beneficiary of nil and 38 as of December 31, 2020 and 2021, respectively):		
Lease liabilities, non-current	5,688	16,048
Deferred revenue, non-current	707	859
Other non-current liabilities	—	8,484
Total non-current liabilities	6,395	25,391
Total liabilities	98,323	134,489
Commitments and Contingencies		

The accompanying notes are an integral part of these consolidated financial statements.

TUYA INC.

CONSOLIDATED BALANCE SHEETS (CONTINUED)

AS OF DECEMBER 31, 2020 AND 2021

(All amounts in US$ thousands ("US$"), except for share and per share data, unless otherwise noted)

	As of December 31,	
	2020	2021
Mezzanine equity		
Series A convertible preferred shares (US$0.00005 par value; 65,288,360 shares authorized, issued and outstanding as of December 31, 2020; nil shares authorized, issued and outstanding as of December 31, 2021)	9,000	—
Series A-1 convertible preferred shares (US$0.00005 par value; 15,959,140 shares authorized as of December 31, 2020; 12,222,267 shares issued and outstanding as of December 31, 2020; nil shares authorized, issued and outstanding as of December 31, 2021)	2,680	—
Series B convertible preferred shares (US$0.00005 par value; 90,782,550 shares authorized as of December 31, 2020; 87,756,440 shares issued and outstanding as of December 31, 2020; nil shares authorized, issued and outstanding as of December 31, 2021)	29,000	—
Series C convertible preferred shares (US$0.00005 par value; 60,469,840 shares authorized as of December 31, 2020; 60,468,490 shares issued and outstanding as of December 31, 2020; nil shares authorized, issued and outstanding as of December 31, 2021)	115,007	—
Series D convertible preferred shares (US$0.00005 par value; 75,000,000 shares authorized as of December 31, 2020; 52,428,242 shares issued and outstanding as of December 31, 2020; nil shares authorized, issued and outstanding as of December 31, 2021)	177,980	—
Total mezzanine equity	333,667	—

The accompanying notes are an integral part of these consolidated financial statements.

TUYA INC.

CONSOLIDATED BALANCE SHEETS (CONTINUED)

AS OF DECEMBER 31, 2020 AND 2021

(All amounts in US$ thousands ("US$"), except for share and per share data, unless otherwise noted)

	As of December 31,	
	2020	2021
Shareholders' (deficit)/equity:		
Ordinary shares (US$0.00005 par value; 692,500,110 shares authorized, 221,980,000 shares issued and outstanding as of December 31, 2020; nil shares authorized, issued and outstanding as of December 31, 2021)	11	—
Class A ordinary shares (US$0.00005 par value; nil and 600,000,000 shares authorized as of December 31, 2020 and 2021, respectively; nil and 491,846,560 shares issued as of December 31, 2020 and 2021, respectively; nil and 480,241,752 shares outstanding as of December 31, 2020 and 2021, respectively)	—	25
Class B ordinary shares (US$0.00005 par value; nil and 200,000,000 shares authorized as of December 31, 2020 and 2021, respectively; nil and 79,400,000 shares issued and outstanding as of December 31, 2020 and 2021, respectively)	—	4
Treasury stock (US$0.00005 par value; nil and 11,604,808 shares as of December 31, 2020 and 2021, respectively)	—	(46,930)
Additional paid-in capital	27,315	1,526,140
Subscription receivables from shareholders	—	—
Accumulated other comprehensive income	481	2,320
Accumulated deficit	(192,474)	(367,898)
Total shareholders' (deficit)/equity	(164,667)	1,113,661
Total liabilities, mezzanine equity and shareholders' (deficit)/equity	267,323	1,248,150

The accompanying notes are an integral part of these consolidated financial statements.

TUYA INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

FOR THE YEARS ENDED DECEMBER 31, 2019, 2020 AND 2021

(All amounts in US$ thousands ("US$"), except for share and per share data, unless otherwise noted)

	Year Ended December 31,		
	2019	2020	2021
Revenue	105,789	179,874	302,076
Cost of revenue	(78,003)	(117,937)	(174,209)
Gross profit	27,786	61,937	127,867
Operating expenses:			
Research and development expenses	(52,003)	(77,430)	(174,289)
Sales and marketing expenses	(37,017)	(37,556)	(75,384)
General and administrative expenses	(12,196)	(17,868)	(71,589)
Other operating (expenses)/incomes, net	(10)	1,071	9,835
Total operating expenses	(101,226)	(131,783)	(311,427)
Loss from operations	(73,440)	(69,846)	(183,560)
Other income/(loss)			
Other non-operating incomes, net	—	—	1,958
Financial income, net	3,326	3,220	7,286
Foreign exchange loss, net	(239)	(80)	(618)
Loss before income tax expense	(70,353)	(66,706)	(174,934)
Income tax expense	(124)	(206)	(490)
Net loss	(70,477)	(66,912)	(175,424)
Net loss attributable to Tuya Inc.	(70,477)	(66,912)	(175,424)
Deemed dividend to convertible preferred shareholders	(3,430)	—	—
Net loss attribute to ordinary shareholders	(73,907)	(66,912)	(175,424)
Net loss	(70,477)	(66,912)	(175,424)
Other comprehensive (loss)/income			
Changes in fair value of long-term investments	—	—	357
Foreign currency translation	(428)	2,882	1,482
Total comprehensive loss attributable to Tuya Inc.	(70,905)	(64,030)	(173,585)
Net loss attributable to Tuya Inc.	(70,477)	(66,912)	(175,424)
Deemed dividend to convertible preferred shareholders	(3,430)	—	—
Net loss attributable to ordinary shareholders	(73,907)	(66,912)	(175,424)
Weighted average number of ordinary shares used in computing net loss per share, basic and diluted	221,980,000	221,980,000	489,149,533
Net loss per share attributable to ordinary shareholders - basic and diluted	(0.33)	(0.30)	(0.36)
Share-based compensation expenses were included in:			
Research and development expenses	1,218	2,596	14,542
Sales and marketing expenses	1,109	1,529	6,702
General and administrative expenses	2,893	5,321	44,845

The accompanying notes are an integral part of these consolidated financial statements.

TUYA INC.

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' (DEFICIT)/EQUITY

FOR THE YEARS ENDED DECEMBER 31, 2019, 2020 AND 2021
(All amounts in US$ thousands ("US$"), except for share and per share data, unless otherwise noted)

	Ordinary shares (US$0.00005 par value)			Treasury Stock					
	Number of shares issued	Amount	Additional paid-in capital	Number of shares	Amount	Receivables from shareholders	Accumulated other comprehensive (loss)/income	Accumulated deficit	Total shareholders' deficit
		US$	US$		US$	US$	US$	US$	US$
Balance as of January 1, 2019	221,980,000	11	16,079	—	—	(10)	(1,973)	(55,085)	(40,978)
Net loss	—	—	—	—	—	—	—	(70,477)	(70,477)
Foreign currency translation adjustment	—	—	—	—	—	—	(428)	—	(428)
Deemed dividend to convertible preferred shareholders	—	—	(3,430)	—	—	—	—	—	(3,430)
Share-based compensation	—	—	5,220	—	—	—	—	—	5,220
Balance as of December 31, 2019	221,980,000	11	17,869	—	—	(10)	(2,401)	(125,562)	(110,093)
Net loss	—	—	—	—	—	—	—	(66,912)	(66,912)
Subscription contributions from shareholders	—	—	—	—	—	10	—	—	10
Foreign currency translation adjustment	—	—	—	—	—	—	2,882	—	2,882
Share-based compensation	—	—	9,446	—	—	—	—	—	9,446
Balance as of December 31, 2020	221,980,000	11	27,315	—	—	—	481	(192,474)	(164,667)

The accompanying notes are an integral part of these consolidated financial statements.

TUYA INC.

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' (DEFICIT)/EQUITY (CONTINUED)

FOR THE YEARS ENDED DECEMBER 31, 2019, 2020 AND 2021

(All amounts in US$ thousands ("US$"), except for share and per share data, unless otherwise noted)

	Ordinary shares (US$0.00005 par value)			Treasury Stock					
	Number of shares issued	Amount	Additional paid-in capital	Number of shares issued	Amount	Receivables from shareholders	Accumulated other comprehensive income	Accumulated deficit	Total shareholders' (deficit)/equity
		US$	US$		US$	US$	US$	US$	US$
Balance as of December 31, 2020	221,980,000	11	27,315	—	—	—	481	(192,474)	(164,667)
Issuance of ordinary shares upon Initial Public Offering and related over-allotment option, net of cost of issuance	45,076,479	2	904,730	—	—	—	—	—	904,732
Issuance of ordinary shares prior to Initial Public Offering	16,026,282	1	199,999	—	—	—	—	—	200,000
Conversion of redeemable preferred shares	278,163,799	14	333,653	—	—	—	—	—	333,667
Issuance of ordinary shares reserved for equity incentive plan	10,000,000	1	—	(10,000,000)	(1)	—	—	—	—
Repurchase of ordinary shares	—	—	—	(7,008,269)	(53,645)	—	—	—	(53,645)
Exercise of share option	—	—	(5,646)	5,403,461	6,716	—	—	—	1,070
Net loss	—	—	—	—	—	—	—	(175,424)	(175,424)
Fair value change of long-term investment	—	—	—	—	—	—	357	—	357
Foreign currency translation adjustment	—	—	—	—	—	—	1,482	—	1,482
Share-based compensation	—	—	66,089	—	—	—	—	—	66,089
Balance as of December 31, 2021	571,246,560	29	1,526,140	(11,604,808)	(46,930)	—	2,320	(367,898)	1,113,661

The accompanying notes are an integral part of these consolidated financial statements.

TUYA INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

FOR THE YEARS ENDED DECEMBER 31, 2019, 2020 AND 2021

(All amounts in US$ thousands ("US$"), except for share and per share data, unless otherwise noted)

	Year Ended December 31,		
	2019	2020	2021
Cash flows from operating activities:			
Net loss	(70,477)	(66,912)	(175,424)
Adjustments to reconcile net loss to net cash generated from operating activities:			
Share-based compensation	5,220	9,446	66,089
Depreciation and amortization of property, equipment and software	758	1,662	3,369
Amortization of right-of-use assets	2,640	4,022	6,981
Allowance for doubtful receivables	366	278	1,030
Inventory write-downs	291	539	1,806
Loss on disposal of property, equipment and software	1	—	365
Gain on disposal of a long-term investment	—	(147)	—
Loss on foreign currency exchange rates	239	80	618
Fair value change on short-term and long-term investments	—	—	833
Cash flows from operating activities:			
Changes in operating assets and liabilities:			
Accounts receivable	(4,010)	(7,243)	(23,430)
Notes receivable	2,627	(8,747)	7,733
Inventories	(11,037)	(19,787)	(22,121)
Prepayments and other current assets	(1,749)	3,615	(13,134)
Other non-current assets	(549)	(778)	(89)
Accounts payable	7,498	10,983	(10,947)
Advance from customers	1,493	13,027	4,010
Deferred revenue	554	3,398	5,938
Income tax payable	73	4	(159)
Accruals and other payables	11,811	11,939	19,109
Lease liabilities	(2,312)	(4,590)	(7,164)
Other non-current liability	—	—	8,484
Net cash used in operating activities	(56,563)	(49,211)	(126,103)
Cash flows from investing activities:			
Payment for short-term investments	(270,417)	(196,806)	(468,705)
Proceeds from disposal of short-term investments	281,456	192,493	385,549
Purchase of property, equipment and software	(2,487)	(3,201)	(6,193)
Proceeds from disposal of property, equipment and software	5	5	28
Provision of bridge loans	—	—	(2,930)
Loan repayment	—	—	628
Payment for long-term investments	(66)	(564)	(21,334)
Proceeds from disposal of a long-term investment	—	221	—
Net cash generated from/(used in) investing activities	8,491	(7,852)	(112,957)

TUYA INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS (CONTINUED)

FOR THE YEARS ENDED DECEMBER 31, 2019, 2020 AND 2021
(All amounts in US$ thousands ("US$"), except for share and per share data, unless otherwise noted)

	Year Ended December 31,		
	2019	2020	2021
Cash flows from financing activities:			
Proceeds from issuance of convertible preferred shares, net of issuance costs	177,980	—	—
Proceeds from issuance of Class A ordinary shares upon Initial Public Offering and related over-allotment option, net of cost of issuance	—	—	904,732
Payment for repurchase of ordinary shares	—	—	(64,000)
Proceeds from issuance of ordinary shares prior to Initial Public Offering	—	—	200,000
Proceeds from exercise of share options	—	—	1,070
Payment for repurchase of convertible preferred shares	(3,750)	—	—
Payments of deferred offering costs	—	(182)	—
Subscription contributions from shareholders	—	10	—
Net cash generated from/(used in) financing activities	174,230	(172)	1,041,802
Effect of exchange rate changes on cash and cash equivalents, restricted cash	(481)	2,903	2,879
Net increase/(decrease) in cash and cash equivalents, restricted cash	125,677	(54,332)	805,621
Cash and cash equivalents, restricted cash at the beginning of year	87,610	213,287	158,955
Cash and cash equivalents, restricted cash at the end of year	213,287	158,955	964,576
Supplemental cash flow disclosures			
Cash paid for income tax	(197)	(210)	(616)
Supplemental schedule of non-cash investing activities			
Conversion from bridge loan into investment	—	—	2,302

	As of December 31,		
	2019	2020	2021
Cash and cash equivalents	213,258	158,792	963,938
Restricted cash	29	163	638
Total cash, cash equivalents and restricted cash shown in the statement of cash flows	213,287	158,955	964,576

The accompanying notes are an integral part of these consolidated financial statements.

TUYA INC.
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
(All amounts in US$ thousands ("US$"), except for share and per share data, unless otherwise noted)

1. Organization and principal activities

(a) Principal Activities

Tuya Inc. (the "Company") was incorporated under the laws of the Cayman Islands on August 28, 2014, as an exempted company with limited liability. The Company and its subsidiaries and consolidated variable interest entity ("VIE") (collectively referred to as the "Group") are principally engaged in offering PaaS (Platform-as-a-Service) to business customers developing IoT (Internet of Things) devices, including brands and their OEMs (original equipment manufacturer). Also, the Group offers Industry SaaS (Software-as-a-Service) and cloud-based value-added services to its customers. The Group also sells finished smart devices powered by Tuya purchased from qualified OEMs (the "Smart device distribution").

(b) History of the Group

Prior to the incorporation of Tuya Inc. in August 2014, the Group commenced its initial operations through Hangzhou Tuya Technology Co., Ltd. ("Hangzhou Tuya Technology"), which was established on June 16, 2014 by Wang Xueji and another individual. After a series of agreements, Hangzhou Tuya Technology was owned by Wang Xueji and other four individuals (collectively, the "Registered Shareholders") together with two unrelated investors of Series Angel financing (the "Non-Registered Shareholders VIE Investors") by August 2014. In December 2014, Hangzhou Tuya Information Technology Co., Ltd. ("the WFOE") was established after the incorporation of Tuya Inc. The Group then entered into a series of contractual arrangements among the WFOE, Hangzhou Tuya Technology and Hangzhou Tuya Technology's shareholders in December 2014, and thereafter Hangzhou Tuya Technology (the "VIE") became the variable interest entity of the Group. The VIE was controlled by Wang Xueji before and after this transaction. After the completion of this transaction, the Group's consolidated financial statements include the financial statements of the Company, its subsidiaries and the consolidated VIE. In 2019, the VIE agreements were amended and restated, which amended the VIE's shareholders list and equity interest of each shareholder as a result of the change in registered share capital of the VIE and exit of Non-Registered Shareholders VIE Investors as the VIE's shareholders. All rights and obligations, clause, and terms regarding VIE accounting and consolidation basis remained the same. The VIE continues to be under Wang Xueji's control during the periods presented.

As of December 31, 2020 and 2021, the Company's principal subsidiaries and consolidated VIE are as follows:

Name of subsidiaries	Date of incorporation	Place of incorporation	Percentage of direct or indirect ownership	Principal activities
Tuya (HK) Limited	September 12, 2014	Hong Kong, China	100 %	Investment holding and business development
Hangzhou Tuya Information Technology Co., Ltd.	December 5, 2014	Hangzhou, China	100 %	Sales of IoT PaaS, Smart devices, SaaS and Others and research and development
Tuya Smart Inc.	July 19, 2019	Delaware, United States	100 %	Business development
Tuya Global Inc.	July 22, 2015	California, United States	100 %	Business development
Tuyasmart (India) Private Limited	January 31, 2019	Gurgaon, India	100 %	Business development
Tuyasmart (Colombia) S.A.S	July 2, 2019	Medellin, Colombia	100 %	Business development
Tuya GmbH	May 13, 2019	Hamburg, Germany	100 %	Business development
Tuya Japan Co., Ltd.	January 23, 2019	Tokyo, Japan	100 %	Business development
Zhejiang Tuya Smart Electronics Co., Ltd.	May 9, 2020	Hangzhou, China	100 %	Sales of Smart devices

Name of VIE	Date of incorporation	Place of incorporation	Economic interest held	Principal Activities
Hangzhou Tuya Technology Co., Ltd.	June 16, 2014	Hangzhou, China	100 %	No substantial business

The VIE operated de minimis business activities and had no material impact on the Company's financial position, results of operations or cash flows for the years ended December 31, 2019, 2020 and 2021.

(c) COVID-19 impact and liquidity

For the years ended December 31, 2020 and 2021, the Group's financial performance was not significantly impacted by COVID -19. Though the duration of and the extent to which this pandemic impacts the Group's results will depend on future developments, which are highly uncertain and cannot be predicted at this time. Based on the assessment on the Group's liquidity and financial positions, the Group believes that its current cash and cash equivalents and short-term investments will be sufficient to enable it to meet its anticipated working capital requirements and capital expenditures for at least the next 12 months from the date the consolidated financial statements are issued.

2. Principal Accounting Policies

(a) Basis of Preparation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP").

Principal accounting policies followed by the Group in the preparation of the accompanying consolidated financial statements are summarized below.

(b) Basis of Consolidation

The Group's consolidated financial statements include the financial statements of the Company, its subsidiaries and the VIE for which the Company is the primary beneficiary. All transactions and balances among the Company, its subsidiaries, and the VIE have been eliminated upon consolidation.

A subsidiary is an entity in which the Company, directly or indirectly: (1) controls more than one half of the voting power; (2) has the power to appoint or remove the majority of the members of the board of directors; (3) casts a majority of votes at the meeting of the board of directors; or (4) governs the financial and operating policies of the investee under a statute or agreement among the shareholders or equity holders.

The Company applies the guidance codified in Accounting Standard Codification 810, Consolidations ("ASC 810") on accounting for the VIE, which requires certain variable interest entities to be consolidated by the primary beneficiary of the entity in which it has a controlling financial interest. A VIE is an entity with one or more of the following characteristics: (a) the total equity investment at risk is not sufficient to permit the entity to finance its activities without additional financial support; (b) as a group, the holders of the equity investment at risk lack the ability to make certain decisions, the obligation to absorb expected losses or the right to receive expected residual returns, or (c) an equity investor has voting rights that are disproportionate to its economic interest and substantially all of the entity's activities are on behalf of the investor.

(c) Use of Estimates

The preparation of the Group's consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, long-lived assets and liabilities at the balance sheet date, and the reported revenues and expenses during the reporting periods in the consolidated financial statements and accompanying notes. Accounting estimates reflected in the Group's consolidated financial statements include, but are not limited to reserve for excess and obsolete inventories, valuation allowance for deferred tax assets, stand-alone selling prices (SSP) for each distinct performance obligation, the valuation of ordinary shares and share-based compensation. Estimates are based on historical experiences and on various assumptions that the Group believes are reasonable under current circumstances. As of December 31, 2020 and 2021, the Group considered the economic implications of the COVID-19 on its significant judgments and estimates. Given that changes in circumstances, facts and experience may cause the Group to revise its estimates, actual results could differ materially from those estimates.

(d) Functional Currency and Foreign Currency Translation

The Group uses United States dollar as its reporting currency. The functional currency of the Company and its subsidiaries incorporated in Cayman Islands and Hong Kong is United States dollar, while the functional currency of the Group's other subsidiaries and VIE is their respective local currency as determined based on the criteria of ASC 830, *Foreign Currency Matters*.

Transactions denominated in other than the functional currencies are re-measured into the functional currency of the entity at the exchange rates prevailing on the transaction dates. Financial assets and liabilities denominated in other than the functional currency are re-measured at the balance sheet date exchange rate. The resulting exchange differences are included in the consolidated statements of comprehensive loss as foreign exchange related gains or loss.

The financial statements of the Group's entities using functional currency other than US$ are translated from the functional currency to the reporting currency, US$. Assets and liabilities of the Group's subsidiaries incorporated in PRC are translated into US$ at fiscal year-end exchange rates, while income and expense items are translated at average exchange rates prevailing during each period presented, representing the index rates stipulated by the People's Bank of China. Translation adjustments arising from these are reported as foreign currency translation adjustments and are shown as a separate component of shareholders' equity on the consolidated financial statements.

(e) Fair Value Measurements

Fair value is the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities required or permitted to be recorded at fair value, the Company considers the principal or most advantageous market in which it would transact and it considers assumptions that market participants would use when pricing the asset or liability.

The established fair value hierarchy requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The three levels of inputs that may be used to measure fair value include:

- Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: Observable, market-based inputs, other than quoted prices, in active markets for identical assets or liabilities.
- Level 3: Unobservable inputs to the valuation methodology that are significant to the measurement of the fair value of the assets or liabilities.

Accounting guidance also describes three main approaches to measuring the fair value of assets and liabilities: (1) market approach; (2) income approach and (3) cost approach. The market approach uses prices and other relevant information generated from market transactions involving identical or comparable assets or liabilities. The income approach uses valuation techniques to convert future amounts to a single present value amount. The measurement is based on the value indicated by current market expectations about those future amounts. The cost approach is based on the amount that would currently be required to replace an asset.

Financial assets and liabilities of the Group mainly consist of cash and cash equivalents, restricted cash, short-term investments, account receivables, notes receivable, certain other current assets, long-term investments, trade payables and certain accruals and other liabilities. As of December 31, 2020, except for short-term investments and equity securities with readily determinable fair value included in long-term investments, the carrying values of these financial instruments approximated their fair values due to their short-term maturity. As of December 31, 2021, except for short-term investments, debt securities and equity securities with readily determinable fair value included in long-term investments, the carrying values of these financial instruments approximated their fair values due to their short-term maturity. The Group reports equity securities with readily determinable fair value included in short-term investments at fair value and discloses the fair value of these investments based on level 1 measurement. The Group reports time deposits and wealth management products included in short-term investments and the derivative instruments included in prepayment and other current asset at fair value, and discloses their fair value based on level 2 measurement. The Group reports equity securities with readily determinable fair value included in long-term investments at fair value and discloses the fair value of these investments based on level 2 measurement. The Group reports investment in available-for-sale debt securities included in long-term investments at fair value and discloses the fair value of these investments based on level 3 measurement.

The following table sets forth the Group's assets and liabilities that are measured at fair value on a recurring basis and are categorized using the fair value hierarchy:

		Fair value measurement at reporting date using		
Description	**Fair value as of December 31, 2020**	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Assets:				
Short-term investments	20,976	—	20,976	—
Long-term investments	564	—	564	—
	21,540	—	21,540	—

		Fair value measurement at reporting date using		
Description	**Fair value as of December 31, 2021**	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**
Assets:				
Short-term investments	102,134	4,624	97,510	—
Derivative instruments	74	—	74	—
Long-term investments	26,078	—	495	25,583
	128,286	4,624	98,079	25,583

The roll forward of major Level 3 investments are as follows:

	US$
Fair value of Level 3 investments as of December 31, 2020	—
New addition	25,226
The change in fair value of the investments	357
Fair value of Level 3 investments as of December 31, 2021	25,583

Management determined the fair value of these Level 3 investments based on market approach using various unobservable inputs. The determination of the fair value required significant judgement by management with respect to the assumptions and estimates for the lack of marketability discounts, expected volatility and probability in equity allocation. The significant unobservable inputs adopted in the valuation as of December 31, 2021 are as follows:

Unobservable Inputs	
Expected volatility	37%-69 %
Probability	Liquidation scenario:40 %
	Redemption scenario:40 %
	IPO scenario:20 %

(f) Cash and Cash Equivalents

Cash and cash equivalents include cash in bank and time deposits placed with banks or other financial institutions which have original maturities of three months or less at the time of purchase and are readily convertible to known amounts of cash.

(g) Restricted Cash

Restricted cash represents cash that cannot be withdrawn without the permission of third parties. The Group's restricted cash is substantially cash balance on deposit required by its business partners and commercial banks. The restricted cash balance for the year ended December 31, 2020 was related to cash preservation for an ongoing dispute between the Company and one of its customers in associated with smart devices sold to this customer. It was released from the restriction in February 2021 due to the alignment reached under the dispute between the Company and the customer. The restricted cash balance for the year ended December 31, 2021 was related to deposits for foreign currency forward contracts, and were subsequently released from the restriction in January 2022.

(h) Short-term Investments

Short-term investments are comprised of i) time deposits placed with banks with original maturities longer than three months but less than one year, ii) structured deposits and wealth management products issued by banks which contains fixed or variable interest with original maturities within one year, and iii) equity securities with readily determinable fair value which the Group has intention to sell within one year. The time deposits and wealth management products are generally not permitted to be redeemed early or are subject to penalties for redemption prior to maturities. These investments are stated at fair value. Changes in the fair value are reflected in financial income, net in the consolidated statements of comprehensive loss.

(i) Accounts Receivable, net

Accounts receivables are presented net of allowance for doubtful accounts. The Group maintains an allowance for doubtful accounts which reflects its best estimate of amounts that potentially will not be collected. The Group determines the allowance for doubtful accounts by taking into consideration various factors including but not limited to historical collection experience and creditworthiness of the customers. Accounts receivable balances are written off after all collection efforts have been exhausted.

Notes receivable are primarily bank acceptance notes. The Group accepts bank acceptance notes from customers for products sold or services performed in the ordinary course of business. Bank acceptance notes are negotiable instruments with cash settlement from commercial banks within 6 months. Upon receipt of the bank acceptance notes, the Group's accounts receivable from the customer is derecognized. The bank acceptance notes can also be endorsed to suppliers as settlement of accounts payable. Bank acceptance notes of US$12.4 million, US$1.4 million, and nil were endorsed to suppliers for the years ended December 31, 2019, 2020 and 2021, respectively. As of December 31, 2020 and 2021, the endorsed bank acceptance notes but yet due were nil and nil, respectively. The Group sells bank acceptance notes to financial institutions without recourse in the normal course of business through factoring arrangements. These bank acceptance notes transferred without recourse were nil and US$13,814 for the years ended December 31, 2020 and 2021 respectively, and were derecognized.

(j) Inventories, net

Inventories are comprised of finished goods, work in process, raw materials and low value consumables and spare parts. Inventories are stated at the lower of cost and net realizable value. Cost of inventory is determined using the weighted average cost method. Adjustments are recorded to write down the cost of inventory to the estimated net realizable value due to slow-moving and obsolete inventories, which is dependent upon factors such as historical and forecasted consumer demand, and promotional environment. The Group takes ownership, risks and rewards of the products purchased.

(k) Operating Lease

The Group adopted ASC 842, Leases, on January 1, 2019 on modified retrospective basis. The Group determines if an arrangement is a lease at inception. Operating leases are primarily for office and warehouse and are included in operating lease right-of-use assets, net, operating lease liabilities, current and operating lease liabilities, non-current on its consolidated balance sheets. Operating lease right-of-use assets represent the Group's right to use an underlying asset for the lease term and operating lease liabilities represent obligation to make lease payment arising from the lease. The operating lease right-of-use assets and liabilities are recognized at lease commencement date based on the present value of lease payment over the lease term. As most of the Group's leases do not provide an implicit rate, the Group uses its incremental borrowing rate based on the information available at lease commencement date in determining the present value of lease payments. The operating lease right-of-use assets also includes any lease payments made and excludes lease incentives. The Group's lease term may include options to extend or terminate the lease. Renewal options are considered within the operating lease right-of-use assets and liabilities when it is reasonably certain that the Group will exercise that option. Lease expense for lease payments is recognized on a straight-line basis over the lease term.

For operating lease with a term of one year or less, the Group has elected not to recognize a lease liability or lease right of use asset on its consolidated balance sheets. Instead, it recognizes the lease payment as expense on a straight-line basis over the lease term. Short-term lease costs are immaterial to its consolidated statements of comprehensive loss. The Group has operating lease agreements with insignificant non-lease components and have elected the practical expedient to combine and account for lease and non-lease components as single lease component.

(l) Internal-Use Software Development Costs

The Group recognizes its internal-use software development costs related to its IoT cloud platform functions, including related website, software and mobile applications in accordance with ASC 350-50 "Website development costs" and ASC 350-40 "Internal-use software". Costs related to preliminary project activities and post-implementation operating activities are expensed as incurred. Cost capitalized for developing IoT cloud platform functions were not material for the periods presented.

(m) Property, Equipment and Software

Property, equipment and software are stated at historical cost less accumulated depreciation, amortization and impairment loss, if any. Depreciation and amortization is computed using the straight-line method over the following estimated useful lives, taking into account any estimated residual value:

Leasehold improvements	the shorter of their useful lives and the lease terms
Computers and electronic equipment	3 years
Office equipment	3 years
Software	3 years

Repairs and maintenance costs are charged to expenses as incurred, whereas the costs of renewals and improvements that extend the useful lives of property, equipment and software are capitalized as additions to the related assets. The Group recognized the gain or loss on the disposal of property, equipment and software in the consolidated statements of comprehensive loss.

Construction in progress represents assets under construction. Construction in progress is transferred to property, equipment and software and depreciation or amortization commences when an asset is ready for its intended use.

(n) Long-term Investments

Long-term investments represent the Group's equity security investments and debt security investments in the periods presented. Equity securities without readily determinable fair values are measured and recorded using a measurement alternative that measures the securities at cost minus impairment, if any, plus or minus changes resulting from qualifying observable price changes. Equity securities with readily determinable fair values are measured and recorded at fair value on a recurring basis with changes in fair value, whether realized or unrealized, recorded in financial income, net in the consolidated statements of comprehensive loss. Debt security investments that have readily determinable fair value, are accounted for as available-for-sale security investments and are recognized based on trade date and carried at estimated fair value with the aggregate unrealized gains and losses related to these investments, net of taxes, reported through other comprehensive income in the consolidated statements of comprehensive loss.

(o) Impairment of Long-lived Assets

For other long-lived assets including property, equipment and software and other non-current assets, the Group evaluates for impairment whenever events or changes (triggering events) indicate that the carrying amount of an asset may no longer be recoverable. The Group assesses the recoverability of the long-lived assets by comparing the carrying value of the long-lived assets to the estimated undiscounted future cash flows expected to receive from use of the assets and their eventual disposition. Such assets are considered to be impaired if the sum of the expected undiscounted cash flows is less than the carrying amount of the assets. The impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. No impairment charges were recognized for the years ended December 31, 2019, 2020 and 2021.

(p) Mezzanine Equity

Mezzanine equity represents the Series A, Series A-1, Series B, Series C and Series D convertible preferred shares (collectively, the "Preferred Shares") issued by the Company. Preferred Shares are contingently redeemable upon the occurrence of an event that is outside of the Company's control. Therefore, the Group classifies the Preferred Shares as mezzanine equity. See Note 16—Convertible Preferred Shares.

(q) Value Added Taxes

The Group's subsidiaries and VIE in the PRC are subject to value-added taxes ("VAT") on its products and services, less any deductible VAT the Group has already paid or borne. They are also subject to surcharges on VAT payments in accordance with PRC law. VAT is not included in the revenue recognized for the Group.

The Company's two subsidiaries, Hangzhou Tuya Information Technology Co., Ltd. and Zhejiang Tuya Smart Electronics Co., Ltd. obtained their software copy certificate in July and December 2020, respectively, and are eligible for the VAT refund-upon-collection policy, which entitles Hangzhou Tuya Information Technology Co., Ltd. and Zhejiang Tuya Smart Electronics Co., Ltd. to receive relevant refund for the part VAT in excess of 3% of its actual tax burden upon completion of relevant VAT refund filling process. The VAT refund received is recorded in other operating (expenses)/incomes, net in the consolidated statements of comprehensive loss. For the years ended December 31, 2019, 2020 and 2021, VAT refund received by the Company was nil, US$303 and US$8,919, respectively.

(r) Revenue Recognition

The Group accounts for revenue in accordance with Accounting Standards Codification (ASC) Topic 606, Revenue From Contracts With Customers (ASC 606) for all periods presented. According to ASC 606, revenue is recognized when control of the promised goods or services is transferred to the customers, in an amount that reflects the consideration the Group expects to be entitled to in exchange for those goods or services. The Group determines revenue recognition through the following steps: (1) identify the contract(s) with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract, and (5) recognize revenue when (or as) the entity satisfies a performance obligation. The Group assesses its revenue arrangements against specific criteria in order to determine if it is acting as principal or agent. Revenue arrangements with multiple performance obligations are divided into separate distinct goods or services. The Group allocates the transaction price to each performance obligation based on the relative standalone selling price of the goods or services provided.

Revenue is recorded net of value-added tax.

The Group's revenue was disaggregated by its major revenue streams in the years presented as follows:

	Year Ended December 31,		
	2019	2020	2021
IoT PaaS	76,365	151,677	261,360
Smart device distribution	27,474	22,071	22,153
SaaS and others	1,950	6,126	18,563
Total revenue	105,789	179,874	302,076

I. Revenue from IoT PaaS

IoT PaaS combines cloud-based connectivity and basic IoT services, edge capabilities (embedded in modules), app development, and device optimization solutions. The Company determined there are two distinct performance obligations in the delivery of IoT PaaS products including: (1) IoT PaaS products with edge capabilities, app development and device optimization solutions, and; (2) cloud-based connectivity and basic IoT services provided to customers and end consumers. The Group allocates the transaction price to each performance obligation based on their relative standalone selling price. The standalone selling price for IoT PaaS products is estimated based on the competitor's pricing for similar products in the market, adjusted for entity-specific factors. As the standalone selling price of the cloud-based connectivity and basic IoT services is not directly observable, it is estimated by the Group by using an expected cost plus a margin approach. Key areas of judgment include the selection of relevant cloud and other costs necessary to satisfy the performance obligation and estimated profit margins. For the delivery of IoT PaaS product, revenue is recognized when IoT PaaS products are accepted by customers, which is the point that control of the product is transferred to the customers. A receivable is recognized when the IoT PaaS products are delivered and accepted by customers as this is the point in time that the consideration is unconditional. For cloud-based connectivity and basic IoT services, revenue is deferred and subsequently recognized from the end consumer's activation to the end of the estimated IoT PaaS product's life cycle on a straight-line basis. Based on the Group's historical information, activation occurs, on average, an estimated 6 months after the IoT PaaS products are delivered to customers. The length of life cycle of the IoT PaaS products is estimated based on the historical data in previous years and by referencing the life cycle of different smart devices (e.g. lighting, security and monitoring devices) which ranged from 1.5 to 2 years.

Return allowances for IoT PaaS products are estimated based on historical experiences and accounted for as reduction of net revenue.

The Group provides sales rebates to its customers from time to time, which is accounted for as reduction of net revenue.

The Group started a membership program (the "2019 Membership Program") in the fourth quarter of 2019. In the 2019 Membership Program, customers pay a fixed fee in exchange for IoT PaaS discount, VIP technical support, valued added services ("VAS" i.e., customized app development), and free participation in promotional activities. The promise to provide for technical support related services, the promotion related services and VAS are considered immaterial promises in the contract and are not considered distinct performance obligations. The membership fee is refundable if the volume requirements are met when the membership period ends. The Group historically generally refunds the membership fees even if the volume requirements are not met. Therefore, the Group does not expect being able to keep any of the membership fees and such fees are recorded as a refund liability under the 2019 Membership Program.

The Group launched a new membership program (the "2020 Membership Program") in the fourth quarter of 2020 and no longer offered 2019 Membership Program ever since. In the 2020 Membership Program, customers pay a non-refundable fixed fee in exchange for member-exclusive IoT PaaS discounts within the membership period of typically 12 months. The Group records the upfront fixed membership fee as a deferred revenue and recognizes revenue on a straight-line basis typically over the 12-month membership period in which customers entitle to the membership.

II. Revenue from smart device distribution

In certain circumstances, the Group offers select brands, primarily customers who prefer not to deal with multiple OEMs, an option to purchase directly from the Group finished smart devices where IoT PaaS is deployed. After the brands place purchase orders directly with the Group, the Group then sources the appropriate smart devices from OEMs based on the type of devices, hardware specifications and other metrics. The Group determines that there are two distinct performance obligations for its smart device distribution including the (1) smart devices embedded with IoT PaaS; and (2) cloud-based connectivity and basic IoT services. The transaction price allocation and revenue recognition are the same as the revenue from IoT PaaS.

The Group presents the revenue generated from its smart device distribution on a gross basis as the Group has control of the smart devices before they are transferred to the brand customers. In making this determination, the Group concludes it meets the principles of control and that it is the primary obligor to the brand customers, are subject to inventory risk and have latitude in establishing prices.

III. Revenue from SaaS and others

SaaS and other revenue mainly include industry SaaS, customized software development and configuration, and other VAS to both business customers and the end consumers.

Industry SaaS is a vertical-focused software solution that enables businesses to easily and securely deploy, connect, and manage large numbers of smart devices for which the Group generally charges an annual subscription fee. These services include software authorization and standard SaaS platform maintenances and technical support.

Customized software development and configuration mainly relate to contracts for the specific IT needs of the brands. The contracts generally include fixed milestone payments determined based on expected labor hours to complete the milestone.

VAS primarily includes complementary services that are provided to brands and OEMs such as app launch, AI-powered virtual voice assistants, and data analytics and others. Such arrangements with the customers are short term and the performance obligations are satisfied at one point of time. VAS also include cloud-based services for the end customers such as IoT data storage, push messaging, object detection and digital content.

There are different kinds of contracts included in the SaaS and others, and each contract may contain multiple elements. The Group identifies the distinct performance obligations and allocates transaction price to each distinct performance obligation based on relative estimated standalone selling price. Revenue is recognized when the performance obligations are satisfied, which is either over the period of time in which the Group performs these services or at one point of time.

Remaining performance obligations

The remaining performance obligations primarily relate to the Group's provision of i) cloud-based connectivity and basic IoT services; ii) membership services; and iii) SaaS and others, and all three of them are included in deferred revenue.

The amounts allocated to the cloud-based connectivity and basic IoT services are deferred and recognized on a straight-line basis over the estimated IoT PaaS product's life cycle. The Group apportions deferred revenue between current and non-current based upon cloud-based connectivity and basic IoT services to be provided over the life cycle of smart devices. Deferred revenue relating to the Group's cloud services that have an expiration date of less than 12 months are classified as current, otherwise non-current.

Starting from the fourth quarter of 2020, there are i) upfront fixed membership fee received and recorded as part of the deferred revenue, it is recognized as revenue on a straight-line basis typically over the 12-month membership period in which customers are entitled to the membership; and ii) amounts related to providing industry SaaS (included in SaaS and others), in general, the Company charges annual subscription fee, which is deferred and recognized on a straight-line basis typically over the 12-month service period.

As of December 31, 2020 and 2021, the aggregate amount of transaction price allocated to the remaining performance obligations was US$4,175 and US$10,113 respectively, of which US$3,468 and US$9,254 were recorded in current deferred revenue while US$707 and US$859 were recorded in non-current deferred revenue respectively.

The Group's contract liability, including both deferred revenue and the advance from customers, is US$31,253 and US$41,201 as of December 31, 2020 and 2021 respectively.

The Group applies the practical expedient to omit disclosure of information about the transaction price allocated to remaining performance obligations and when revenue will be recognized, for the related contract has a duration of one year or less. The remaining amounts recorded in non-current deferred revenue of US$707 and US$859 as of December 31, 2020 and 2021, respectively, would likely be recognized within 18 to 36 months.

The Group provides warranty for IoT PaaS and smart device distribution mainly for one year. The Group accrues a warranty reserve for all IoT PaaS and smart device distribution, which include the Group's best estimate of the projected costs to repair or replace items under warranties. These estimates are based on actual claims incurred to date and an estimate of the nature, frequency and costs of future claims. These estimates are inherently uncertain given the Group's relatively short history of sales, and changes to the historical or projected warranty experience may cause material changes to the warranty reserve when the Group accumulates more actual data and experience in the future. The warranty reserve expected to be incurred is included within accruals and other liabilities in the consolidated balance sheets.

(s) Advance from Customers

Amounts recorded in the advance from customers account represent cash payments made upfront by the Group's customers under each sales contract. These amounts are not yet reclassed to deferred revenue account is because the Group has not started to fulfil any of its performance obligations identified under the contract at the time. The amounts in the advance from customers are reclassified to either revenue or deferred revenue when the Group commences fulfillment of its performance obligation, depending on whether respective revenue is to be recognized at one point of time or over the period of time. If the Group fulfils its performance obligation at one point of time, the related amount in the advance from customers will be reclassified and recognized as revenue; whereas for the performance obligation that the Group starts to provide over the period of time, the amount in the advance from customers will be reclassified to deferred revenue.

(t) Cost of Revenues

Cost of revenue consists primarily of purchase price of materials, manufacturing charges from outsourced factories, estimated warranty costs, inventories write-downs, payroll cost of production support personnel and third-party cloud infrastructure expenses that are directly attributable to the sales of products or services rendered. Inbound shipping charges to receive raw materials from suppliers are included in the inventories and recognized as cost of revenues upon sale of products and render of services.

(u) Research and Development Expenses

Research and development expenses consist primarily of payroll cost including share-based compensation expenses for research and development personnel, third-party cloud infrastructure expenses incurred for research and development purposes, rental expenses and depreciation and other expenses in associated with research and development functions. The Group accounts for internal use software development costs in accordance with guidance on intangible assets and internal use software. See Note 2(l)—Internal-Use Software Development Costs.

(v) Sales and Marketing Expenses

Sales and marketing expenses consist primarily of payroll cost including share-based compensation expenses for sales and marketing personnel, promotion and marketing expenses, rental expenses and depreciation and other expenses in associated with sales and marketing functions. Advertising expenses consist primarily of costs for the promotion of the Group's corporate image and product marketing. The Group expenses all advertising costs as incurred and classifies these costs under sales and marketing expenses. For the years ended December 31, 2019, 2020 and 2021, advertising and marketing costs totaled US$10,374, US$6,300 and US$13,637, respectively.

(w) General and Administrative Expenses

General and administrative expenses consist primarily of payroll cost including share-based compensation expenses for corporate personnel, general office expenses, rental expenses and depreciation and other expenses in associated with general and administrative functions.

(x) Government Grants

Government grants are recognized as other operating (expenses)/incomes, net, or as a reduction of specific costs and expenses for which the grants are intended to compensate. Such amounts are recognized in the consolidated statements of comprehensive loss upon receipts as all conditions attached to the grants are fulfilled. Government grants included as other operating (expenses)/incomes, net in the consolidated statements of comprehensive loss amounted to US$102, US$1,299 and US$10,423 for the years ended December 31, 2019, 2020 and 2021, respectively.

(y) Employee Social Security and Welfare Benefits

Employees of the Group in the PRC are entitled to staff welfare benefits including pension, work-related injury benefits, maternity insurance, medical insurance, unemployment benefit and housing fund plans through a PRC government-mandated multi-employer defined contribution plan. The Group is required to contribute to the plan based on certain percentages of the employees' salaries, up to a maximum amount specified by the local government.

The PRC government is responsible for the medical benefits and the pension liability to be paid to these employees and the Group's obligations are limited to the amounts contributed and no legal obligation beyond the contributions made. Employee social security and welfare benefits included as expenses in the consolidated statements of comprehensive loss amounted to US$13,091, US$14,715 and US$42,944 for the years ended December 31, 2019, 2020 and 2021, respectively.

(z) Income Taxes

Current income taxes are recorded in accordance with the regulations of the relevant tax jurisdiction. The Group accounts for income taxes under the asset and liability method in accordance with ASC 740, Income Tax. Under this method, deferred tax assets and liabilities are recognized for the tax consequences attributable to differences between carrying amounts of existing assets and liabilities in the financial statements and their respective tax basis, and operating loss carry-forwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred taxes of a change in tax rates is recognized in the consolidated statements of comprehensive loss in the period of change. Valuation allowances are established when necessary to reduce the amount of deferred tax assets if it is considered more likely than not that amount of the deferred tax assets will not be realized.

The Group considers positive and negative evidence when determining whether a portion or all of its deferred tax assets will more likely than not be realized. This assessment considers, among other matters, the nature, frequency and severity of current and cumulative losses, forecasts of future profitability, the duration of statutory carry-forward periods, its experience with tax attributes expiring unused, and its tax planning strategies. The ultimate realization of deferred tax assets is dependent upon its ability to generate sufficient future taxable income within the carry-forward periods provided for in the tax law and during the periods in which the temporary differences become deductible. When assessing the realization of deferred tax assets, the Group has considered possible sources of taxable income including (i) future reversals of existing taxable temporary differences, (ii) future taxable income exclusive of reversing temporary differences and carry-forwards, (iii) future taxable income arising from implementing tax planning strategies, and (iv) specific known trend of profits expected to be reflected within the industry.

The Group's tax positions are subject to income tax audits by multiple tax jurisdictions throughout the world. The Group recognizes a tax benefit associated with an uncertain tax position when, in its judgment, it is more likely than not that the position will be sustained upon examination by a taxing authority. For a tax position that meets the-more-likely-than-not recognition threshold, the Group initially and subsequently measures the tax benefit as the largest amount that the Group judges to have a greater than 50% likelihood of being realized upon ultimate settlement with a taxing authority. The Group's liability associated with unrecognized tax benefits is adjusted periodically due to changing circumstances, such as the progress of tax audits, case law developments and new or emerging legislation. Such adjustments are recognized entirely in the period in which they are identified. The Group's effective tax rate includes the net impact of changes in the liability for unrecognized tax benefits and subsequent adjustments as considered appropriate by management. The Group classifies interest and penalties recognized on the liability for unrecognized tax benefits as income tax expense. For the years ended December 31, 2019, 2020 and 2021, there were no uncertain tax position liabilities.

(aa) Share-based Compensation

The Company grants restricted shares to the Registered Shareholders (also as key member of management), share options and Restricted Share Units ("RSUs") of the Company to eligible employees and non-employees. The Company accounts for these share-based awards in accordance with ASC 718 Compensation — Stock Compensation.

The Registered Shareholders and employees' share-based awards are measured at the grant date fair value of the awards and recognized as expenses using a straight-line method over the requisite service period, which is the vesting period. For share-based awards granted with only service conditions to its PRC employees, the Group allows accelerated full vesting upon occurrence of a Change in Control (including defined in the Group's Equity Incentive Plan), cumulative share-based compensation expenses for the share-based awards should be recorded upon the completion of the Change in Control.

For non-employees' share-based awards, the Group adopted ASU 2018-07 "Improvements to Nonemployee Share-Based Payment Accounting" for the periods presented. In accordance with ASU 2018-07, it clarifies that equity-classified non-employee share-based awards are measured at the grant date. The definition of the term grant date is amended to generally state the date at which a grantor and a grantee reach a mutual understanding of the key terms and conditions of a share-based payment award. Non-employee share-based awards are measured at the grant date fair value of the awards and recognized as expenses using a straight-line method over the requisite service period, which is the vesting period.

All transactions in which goods or services are received in exchange for equity instruments are accounted for based on the fair value of the consideration received or the fair value of the equity instrument issued, whichever is more reliably measurable.

The binomial option-pricing model is used to measure the value of share options. The determination of the fair value is affected by the fair value of the ordinary shares as well as assumptions regarding a number of complex and subjective variables, including the expected share price volatility, actual and projected employee and nonemployee share option exercise behavior, risk-free interest rates and expected dividend yield. Binomial option-pricing model incorporates the assumptions about grantees' future exercise patterns. The fair value of these awards was determined by management with the assistance from an independent valuation firm using management's estimates and assumptions.

The assumptions used in share-based compensation expense recognition represent management's best estimates, but these estimates involve inherent uncertainties and application of management judgment. If factors change or different assumptions are used, the share-based compensation expenses could be materially different for any period. Moreover, the estimates of fair value of the awards are not intended to predict actual future events or the value that ultimately will be realized by grantees who receive share-based awards. In accordance with ASU 2016-09, the Group made an entity-wide accounting policy election to account for forfeitures when they occur.

(ab) Treasury stocks

Treasury stocks are accounted for using the cost method. Under this method, the cost incurred to purchase the shares is recorded in the treasury stocks account on the consolidated balance sheets. When the Company reissues treasury stock at an amount greater or less than it paid to repurchase the shares, the realized gain or loss is recognized in the consolidated statements of changes in shareholders' (deficit)/equity.

(ac) Loss per Share

Basic loss per share is computed by dividing net loss attributable to ordinary shareholders by the weighted average number of ordinary shares outstanding during the period using the two-class method. Under the two-class method, the net loss is allocated between ordinary shares and other participating securities based on their participating rights. Net loss is not allocated to other participating securities if based on their contractual terms they are not obligated to share in the loss.

Diluted loss per share is calculated by dividing net loss attributable to ordinary shareholders as adjusted for the effect of dilutive ordinary equivalent shares, if any, by the weighted average number of ordinary and dilutive ordinary equivalents shares outstanding during the year. Dilutive equivalent shares are excluded from the computation of diluted loss per share if their effects would be anti-dilutive. Ordinary share equivalents consist of the ordinary shares issuable in connection with the Group's ordinary shares issuable upon the conversion of the share-based awards, using the treasury stock method.

(ad) Comprehensive Loss

Comprehensive loss is defined as the changes in equity of the Group during a period from transactions and other events and circumstances excluding transactions resulting from investments from shareholders and distributions to shareholders. Comprehensive loss for the periods presented includes net loss and foreign currency translation adjustments.

(ae) Segment Reporting

Operating segments are defined as components of an enterprise engaging in businesses activities for which separate financial information is available that is regularly evaluated by the Group's chief operating decision maker in deciding how to allocate resources and assess performance. The Group's chief operating decision maker has been identified as the Chief Executive Officer, who reviews consolidated results including revenue, gross profit and operating profit at a consolidated level only. The Group does not distinguish between markets for the purpose of making decisions about resources allocation and performance assessment. As the Group's long-lived assets are substantially located in the PRC and substantially all the Group's revenue are derived from within the PRC, no geographical segments are presented. Hence, the Group has only one operating segment and one reportable segment.

(af) Recently Issued Accounting Pronouncements

The Group qualifies as an "emerging growth company", or EGC, pursuant to the Jumpstart Our Business Startups Act of 2012, as amended, or the JOBS Act. As an EGC, the Group does not need to comply with any new or revised financial accounting standards until such date that a private company is otherwise required to comply with such new or revised accounting standards. The Group adopts the following standards based on extended transition period provided to private companies or early adopts as necessary as permitted by the respective standards.

New and Amended Standards Adopted by the Group

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842), which requires that a lessee should recognize the assets and liabilities that arise from operating leases. A lessee should recognize in the balance sheet a liability to make lease payments (the lease liability) and a right-of-use asset representing its right to use the underlying asset for the lease term. For leases with a term of 12 months or less, a lessee is permitted to make an accounting policy election by class of underlying asset not to recognize lease assets and lease liabilities. If a lessee makes this election, it should recognize lease expenses for such lease generally on a straight-line basis over the lease term. The new leases standard also provides lessees with a practical expedient, by class of underlying asset, to not separate non-lease components from the associated lease component. If a lessee makes that accounting policy election, it is required to account for the non-lease components together with the associated lease component as a single lease component and to provide certain disclosures. Lessors are not afforded a similar practical expedient. The amendments in this update are effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years for public entities. For all other entities, the amendments in this Update are effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020. Early application of the amendments in this Update is permitted for all entities. Entities are required to adopt the new leases standard using a modified retrospective transition method. Under that transition method, an entity initially applies the new leases standard (subject to specific transition requirements and optional practical expedients) at the beginning of the earliest period presented in the financial statements. The Company adopted this new guidance from the year ended December 31, 2019. In July 2018, the FASB issued ASU 2018-11, which provides another transition method in addition to the existing transition method by allowing entities to initially apply the new leases standard at the adoption date and recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption consistent with preparers' requests. This ASU also addresses stakeholders' concerns about the requirement for lessors to separate components of a contract by providing lessors with a practical expedient, by class of underlying asset, to not separate non-lease components from the associated lease component, similar to the expedient provided for lessees. However, the lessor practical expedient is limited to circumstances in which the non-lease component or components otherwise would be accounted for under the new revenue guidance and both (1) the timing and pattern of transfer are the same for the non-lease component(s) and associated lease component and (2) the lease component, if accounted for separately, would be classified as an operating lease. The Group elected to early adopt ASC 842, Leases, on January 1, 2019 on modified retrospective basis and has elected not to recast comparative periods. Upon the adoption of the new lease standard, on January 1, 2019, the Group recognized operating lease assets of US$2,775 and total operating lease liabilities of US$2,762 (including current liabilities of US$1,230) on the consolidated balance sheets. There was no impact to accumulated deficit at adoption.

In June 2018, the FASB issued ASU 2018-07, Compensation—Stock Compensation (Topic 718)—Improvements to Nonemployee Share-Based Payment Accounting, to align the accounting for share-based payment awards issued to nonemployees with the guidance applicable to grants to employees and remove requirement to reassess classification of nonemployee awards under other literature upon vesting. ASU 2018-07 is effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2020, with early adoption permitted but no earlier than the entity's adoption of ASC 606. The Company adopted ASU 2018-07 on January 1, 2019. Based on ASU 2018-07, entities will generally apply the same guidance to both employee and nonemployee share-based awards, which nonemployee share-based payment equity awards are measured at the grant-date fair value of the equity instruments, similar to employee share-based payment equity awards. The impact of the adoption is not material.

In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement, which eliminates, adds and modifies certain disclosure requirements for fair value measurements. Under the guidance, public companies will be required to disclose the range and weighted average used to develop significant unobservable inputs for Level 3 fair value measurements. The guidance is effective for all entities for fiscal years beginning after December 15, 2019 and for interim periods within those fiscal years, but entities are permitted to early adopt either the entire standard or only the provisions that eliminate or modify the requirements. The Company adopted ASU 2018-13 on January 1, 2019. The impact of the adoption is not material.

In December 2019, the FASB issued ASU 2019-12, Simplifying the Accounting for Income Taxes, as part of its initiative to reduce complexity in accounting standards. The amendments in the ASU are effective for fiscal years beginning after December 15, 2020, including interim periods therein. Early adoption of the standard is permitted, including adoption in interim or annual periods for which financial statements have not yet been issued. The Group adopted the ASU prospectively on January 1, 2021. The impact of the adoption is not material.

In August 2018, the FASB issued ASU 2018-15, Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement that is a Service Contract, which align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). Accordingly, ASU 2018-15 requires an entity (customer) in a hosting arrangement that is a service contract to follow the guidance in Subtopic 350-40 Internal-use software to determine which implementation costs to capitalize as an asset related to the service contract and which costs to expense. Costs for implementation activities in the application development stage are capitalized depending on the nature of the costs, while costs incurred during the preliminary project and postimplementation stages are expensed as the activities are performed. ASU 2018-15 also require the entity (customer) to expense the capitalized implementation costs of a hosting arrangement that is a service contract over the term of the hosting arrangement. The entity also is required to apply the existing impairment guidance in Subtopic 350-40 to the capitalized implementation costs as if the costs were long-lived assets. ASU 2018-15 also require the entity to present the expense related to the capitalized implementation costs in the same line item in the statement of income as the fees associated with the hosting element (service) of the arrangement and classify payments for capitalized implementation costs in the statement of cash flows in the same manner as payments made for fees associated with the hosting element. The entity is also required to present the capitalized implementation costs in the statement of financial position in the same line item that a prepayment for the fees of the associated hosting arrangement would be presented. ASU 2018-15 also require the entity (customer) to expense the capitalized implementation costs of a hosting arrangement that is a service contract over the term of the hosting arrangement, which includes reasonably certain renewals. The amendments in the ASU are effective for public business entities for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. For all other entities, the amendments in this ASU are effective for annual reporting periods beginning after December 15, 2020, and interim periods within annual periods beginning after December 15, 2021. Early adoption of the amendments in this Update is permitted, including adoption in any interim period, for all entities. The amendments in the ASU should be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. The Group adopted the ASU prospectively on January 1, 2021. The impact of the adoption is not material.

New and Amended Standards not yet Adopted by the Group

In June 2016, the FASB issued ASU 2016-13, Financial Instruments—Credit Losses (Topic 326), to provide financial statement users with more useful information about expected credit losses. ASU 2016-13 also changes how entities measure credit losses on financial instruments and the timing of when such losses are recorded. ASU 2016-13 is effective for fiscal years and interim periods within those years beginning after December 15, 2022 for the Group, with early adoption permitted. The Group is currently evaluating the impact ASU 2016-13 will have on its consolidated financial statements and associated disclosures.

The FASB further issued ASU 2018-19, Codification Improvements to Topic 326, Financial Instruments—Credit Losses, ASU 2019-04, Codification Improvements to Topic 326, Financial Instruments—Credit Losses, ASU 2019-05, Financial Instruments-Credit Losses (Topic 326): Targeted Transition Relief, ASU 2019-10, Financial Instruments-Credit Losses (Topic 326): Effective Dates, and ASU 2019-11, Codification Improvements to Topic 326, Financial Instruments—Credit Losses. The amendments in these ASUs provide clarifications to ASU 2016-13.

In January 2020, the FASB issued ASU 2020-01, Investments—Equity securities (Topic 321), Investments—Equity method and joint ventures (Topic 323), and Derivatives and hedging (Topic 815)—Clarifying the interactions between Topic 321, Topic 323, and Topic 815. The amendments clarified that an entity should consider observable transactions that require it to either apply or discontinue the equity method of accounting for the purposes of applying the measurement alternative in accordance with Topic 321 immediately before applying or upon discontinuing the equity method. The amendments also clarified that for the purpose of applying paragraph 815-10-15-141(a) an entity should not consider whether, upon the settlement of the forward contract or exercise of the purchased option, individually or with existing investments, the underlying securities would be accounted for under the equity method in Topic 323 or the fair value option in accordance with the financial instruments guidance in Topic 825. An entity also would evaluate the remaining characteristics in paragraph 815-10-15-141 to determine the accounting for those forward contracts and purchased options. ASU 2020-01 is effective for fiscal years and interim periods beginning after December 15, 2021 for the Group. Early adoption is permitted. The Group is currently evaluating the impact of this new guidance on its consolidated financial statements and associated disclosures.

In November 2021, the FASB issued ASU 2021-10, Disclosures by Business Entities about Government Assistance (Topic 832). The amendment requires a business entity to provide certain disclosures when it has entered into a legally enforceable agreement with a government to receive value, and accounts for the transaction using a grant or contribution accounting model by analogy. ASU 2021-10 is effective for fiscal years beginning after December 15, 2021 for all business entities. The Group is currently evaluating the impact of this new guidance on its consolidated financial statements and associated disclosures.

3. Risks and Concentration

(a) Concentration of Credit Risk

Financial instruments that potentially subject the Group to concentration of credit risk consist of cash and cash equivalents, short-term investments, accounts receivable and notes receivable.

The Group deposits its cash and cash equivalents and short-term investments with major financial institutions which the Group believes that no significant credit risk with high credit quality.

The Group has not experienced any significant recoverability issue with respect to its accounts receivable. The Group assesses the creditworthiness of each customer when providing services and may require the customers to make advance payments or a deposit before the services are rendered.

The following table summarizes customers with greater than 10% of the accounts receivable:

	As of December 31,	
	2020	2021
Customer A	*	19 %
Customer B	19 %	*

* Less than 10%

(b) Concentration of Customers and Suppliers

There are no customers from whom revenues individually represent greater than 10% of the total revenues of the Group in any of the periods presented.

Suppliers contributed more than 10% of total purchases are as below:

	Year ended December 31,		
	2019	2020	2021
Supplier A	29 %	*	*
Supplier B	*	13 %	25 %

* Less than 10%

4. Short-term Investment

	As of December 31,	
	2020	2021
Wealth management products (1)	—	—
Time deposits	20,976	97,510
Equity securities with readily determinable fair value (2)	—	4,624
Total short-term investments	20,976	102,134

(1) For the years ended December 31, 2020 and 2021, the Group's wealth management products mainly consisted of financial products issued by commercial banks in China with a variable interest rate indexed to the performance of underlying assets and a maturity date within one year when purchased or revolving terms, and the weighted average return of the wealth management products was 2.9% and 2.7%, respectively.

(2) Starting from July 2021, the Group, from time to time, invested in ordinary shares of a listed company and disposed of portion of the investments. In the year ended December 31, 2021, the Group recorded unrealized investment loss in fair value of US$1,998 and realized investment income of US$422 upon disposal in financial income, net in the consolidated statements of comprehensive loss. This investment is classified as equity securities with readily determinable fair values.

5. Accounts Receivable, net

	As of December 31,	
	2020	2021
Accounts receivable, gross	12,904	34,345
Less: allowance for doubtful accounts	(588)	(1,644)
Total Accounts receivable, net	12,316	32,701

The Group recorded the allowance for doubtful accounts of US$366, US$278, US$1,030 for the years ended December 31, 2019, 2020 and 2021, respectively.

6. Inventories, net

Inventories consist of the following:

	As of December 31,	
	2020	2021
Raw materials	29,472	55,845
Work in process	3,513	3,359
Finished goods	10,043	5,958
Low value consumables and spare parts	117	145
Less: inventory write-downs	(878)	(2,725)
Total inventories, net	42,267	62,582

The Group recorded inventory write-downs of US$291, US$539, and US$1,806 for the years ended December 31, 2019,2020 and 2021, respectively.

7. Prepayments and Other Assets

The current and non-current portions of prepayments and other assets consist of the following:

	As of December 31,	
	2020	2021
Prepayments and other current assets		
Advance to suppliers	3,882	12,529
Prepayment for share repurchase (1)	—	10,355
Deferred professional costs	—	3,049
Rental deposits	136	438
VAT recoverable (2)	92	621
Receivables from third party payment platforms	256	175
Interest receivable	—	123
Others	27	592
Total prepayments and other current assets	4,393	27,882
Other non-current assets		
Rental deposits	1,547	1,818
Deferred initial public offering related costs	182	—
Total other non-current assets	1,729	1,818

(1) As of December 31, 2021, prepayment for share repurchase represented the advanced payment by the Group to a bank engaged by the Group for the Share Repurchase Program (Note 15).

(2) VAT recoverable represented the balances that the Group can utilize to deduct its VAT liabilities within the next 12 months.

8. Property, Equipment and Software, net

Property, equipment and software consist of the following:

	As of December 31,	
	2020	2021
Cost:		
Leasehold improvements	1,633	3,092
Computers and electronic equipment	4,918	8,539
Office equipment	299	437
Software	362	612
Construction in progress	66	—
Total cost	7,278	12,680
Less: Accumulated depreciation and amortization	(2,904)	(5,875)
Total property, equipment and software, net	4,374	6,805

Depreciation expense was US$758, US$1,662, and US$3,369 for the years ended December 31, 2019, 2020 and 2021, respectively.

As of December 31, 2020 and 2021, the balances of construction in progress were US$66 and nil, respectively, which were primarily related to the leasehold improvements of office buildings.

9. Long-term Investment

	As of December 31,	
	2020	2021
Investments in available-for-sale debt securities (1)	—	25,583
Investment in an equity security with readily determinable fair values	564	495
Investments in equity securities accounted for under alternative measurement	356	—
Total long-term investments	920	26,078

(1) In August 2021, the Group acquired shareholding interest of a privately held company with a cash consideration of RMB20,000 thousand (equivalent to US$3,092). In September 2021, the Group acquired shareholding interest of a privately held company with a cash consideration of RMB5,000 thousand (equivalent to US$774). In October 2021, the Group acquired shareholding interest of a privately held company with a cash consideration of RMB75,000 thousand (equivalent to US$11,713). In November 2021, the Group acquired shareholding interest of a privately held company with a cash consideration of RMB3,000 thousand (equivalent to US$467). In December 2021, the Group acquired shareholding interest of a privately held company with a cash consideration of RMB 7,139 thousand (equivalent to US$1,120).

In September 2021, the Group provided a loan to a customer, with principal amount of RMB4,000 thousand (equivalent to US$617). This loan arrangement was entered into separately from regular sales business with this customer. In accordance with the loan agreement, the loan was interest free, and will be due on August 31, 2022. The Group received the full repayment in December 2021. The Group acquired shareholding interest of this customer with cash consideration of RMB10,000 thousand (equivalent to US$1,571) in December 2021.

In September 2021, the Group provided a bridge loan to a customer, with principal amount of RMB 15,000 thousand (equivalent to US$2,313), which was due within one year. There was a warrant granted to the Group to purchase shares of the customer with pre-agreed valuation cap. This loan arrangement was entered into separately from regular sales business with the customer. In accordance with the bridge loan agreement, the loan was interest free, and the Group was entitled to rights of investments in the customer within certain pre-defined period prior to the loan due dates. In the fourth quarter of 2021, this bridge loan of RMB15,000 thousand was fully converted into investment to the customer together with the Group's additional cash consideration of RMB15,640 thousand (equivalent to US$2,459) to acquire shareholding interest of the customer. There was a realized gain of RMB7,860 thousand (equivalent to US$1,218) charged to financial income, net for the year ended December 31, 2021 due to the exercise of the warrant.

For all of the above-mentioned investments, as the Group has the right to request each investee to redeem the Group's investments at the Group's investment cost plus the interest if the investee fails to meet certain predetermined conditions, the redeemable shares of the investees purchased by the Group were classified as an available-for-sale debt investments and were measured at their fair value. In the year ended December 31, 2021, the fair value changes of the Group's investments in these privately held companies after initial recognition were US$357, which was charged to other comprehensive (loss)/income.

10. Operating Leases

The Company has operating leases primarily for office and operation space. The Company's operating lease arrangements have remaining terms of one year to five years with no variable lease costs.

Operating lease costs were US$3,760, US$4,710 and US$8,231 for the years ended December 31, 2019, 2020 and 2021, respectively.

The components of lease expenses were as follows:

	Year Ended December 31,	
	2020	2021
Lease cost:		
Amortization of right-of-use assets	4,022	6,981
Interest of lease liabilities	396	749
Expenses for short-term lease within 12 months	292	501
Total lease cost	4,710	8,231

Supplemental cash flow information related to leases were as follows:

	Year Ended December 31,	
	2020	2021
Cash paid for amounts included in the measurement of lease liabilities	4,976	7,920
Right-of-use assets obtained in exchange for operating lease liabilities	7,047	23,810

Supplemental consolidated balance sheet information related to leases were as follows:

	As of December 31,	
	2020	2021
Right-of-use assets	12,267	22,181
Operating lease liabilities - current	6,326	5,697
Operating lease liabilities - non-current	5,688	16,048
Total lease liabilities	12,014	21,745
Weighted-average remaining lease term		
Operating leases	2.26 years	3.81 years
Weighted-average discount rate		
Operating lease	4.75% per annum	4.75% per annum

Maturities of lease liabilities were as follows:

	As of December 31,	
	2020	2021
2020	—	—
2021	6,784	—
2022	3,807	6,722
2023	2,028	6,652
2024	47	4,909
2025	18	4,888
2026	—	646
2027	—	5
Total undiscounted lease payments	12,684	23,822
Less: imputed interest	(670)	(2,077)
Total lease liabilities	12,014	21,745

11. Accruals and Other Liabilities

The current and non-current portions of accruals and other liabilities consist of the following:

	As of December 31,	
	2020	2021
Accruals and other current liabilities		
Salary and welfare payable	20,655	30,597
Professional service fee payables	625	5,558
Advertising and promotion fee payables	2,157	4,172
Cloud infrastructure and IT related services fee payables	1,705	3,110
Payment from depositary bank, current (2)	—	2,611
Tax payables	3,189	1,796
Sales return allowances	—	709
Membership fee to be refunded (1)	2,537	471
Product warranty	391	339
Others	479	1,484
Total accruals and other current liabilities	31,738	50,847
Other non-current liabilities		
Payment from depositary bank, non-current (2)	—	8,484
Total accruals and other liabilities	31,738	59,331

(1) Membership fee to be refunded presents the balances of refundable membership fee collected by the Group from its customers under the 2019 Membership Program (Note 2(r)).

(2) The Company received reimbursement payment of US$13,053 from a depositary bank in April 2021. The amount was recorded ratably as other non-operating income over a five-year arrangement period. For the year ended December 31, 2021, the Company recorded US$1,958 in other non-operating income in the consolidated statements of comprehensive loss.

12. Deferred Revenue

	As of December 31,		
	2019	2020	2021
Deferred Revenue			
— Cloud-based connectivity and basic IoT services (1)	777	2,058	2,669
— Membership (2)	—	1,077	3,473
— SaaS (3)	—	1,040	3,971
Total deferred revenue	777	4,175	10,113

(1) Deferred cloud-based connectivity and basic IoT services related revenue

Deferred cloud-based connectivity and basic IoT services related revenue represents the Group's provision of cloud-based connectivity obligation and basic IoT services to customers.

	Year Ended December 31,		
	2019	2020	2021
Beginning balances	223	777	2,058
Deferral of revenue	749	1,781	2,157
Recognition of deferred revenue	(195)	(500)	(1,546)
Ending balances	777	2,058	2,669

(2) Deferred Revenue — Membership

Deferred Revenue — Membership represents the Group's remaining performance obligation performed over the period of time under its 2020 Membership Program (Note 2(r)).

	Year Ended December 31,		
	2019	2020	2021
Beginning balances	—	—	1,077
Deferral of revenue	—	1,229	9,259
Recognition of deferred revenue	—	(152)	(6,863)
Ending balances	—	1,077	3,473

(3) Deferred Revenue — SaaS

Deferred Revenue — SaaS mainly represents the Group's remaining performance obligation in providing industry SaaS services over the period of time (Note 2(r)).

	Year Ended December 31,		
	2019	2020	2021
Beginning balances	—	—	1,040
Deferral of revenue	—	1,834	6,455
Recognition of deferred revenue	—	(794)	(3,524)
Ending balances	—	1,040	3,971

13. Financial Income, net

	Year Ended December 31,		
	2019	2020	2021
Realized interest income and investment income	3,326	3,073	8,045
Gain on disposal of long-term investment	—	147	—
Realized gain of bridge loan conversion to investment (Note 9(1))	—	—	1,218
Fair value change of short-term investments	—	—	(1,998)
Fair value change of long-term investments	—	—	(53)
Others	—	—	74
Total financial income, net	3,326	3,220	7,286

14. Share Split

On June 1, 2018, a 10-for-1 share split of the Company's issued and unissued ordinary shares and convertible preferred shares was affected with par value per share divided by 10. All information related to the Company's ordinary shares, convertible preferred shares and share-based awards has been retroactively adjusted to give effect to the 10-for-1 share split. The par value per ordinary share and the par value per convertible preferred share also have been retroactively revised as if they had been adjusted in proportion to the share split.

15. Ordinary Shares

On August 28, 2014, the Company was incorporated as an exempted company with limited liability with authorized share capital of US$50 divided into 1,000,000,000 shares with par value US$0.00005 each. On August 28, 2014, the Company issued total 200,000,000 shares of ordinary shares with total cash consideration of US$10 to the Registered Shareholders. The Company issued total 21,980,000 ordinary shares for US$0.0797 per share, with cash proceed of RMB9,720 thousand (equivalent to US$1,577) from two investors and US$175 from the other investor (collectively, the "Angel Investors"), on August 28, 2014 and December 23, 2014, respectively.

The Company amended the numbers of its ordinary shares authorized as 934,711,640, 921,032,370, 827,969,950, 767,500,110 and 692,500,110 upon the issuance of Series A, Series A-1, Series B, Series C and Series D convertible preferred shares in December 2014, November 2016, August 2017, April 2018 and September 2019, respectively.

As of December 31, 2019 and 2020, the Company had in aggregate of 221,980,000 ordinary shares issued and outstanding, at a par value of US$0.00005.

As of December 31, 2019, proceeds of the subscription for ordinary shares of the Company in the amount of US$10 were remained outstanding and was presented as subscription receivables from ordinary shareholders in equity, a contra-equity balance on the consolidated balance sheets as of December 31, 2019. In 2020, the ordinary shareholders fully paid the US$10 subscription for ordinary shares of the Company, and therefore, as of December 31, 2020, the balance subscription receivables from ordinary shareholders were nil.

In early February 2021, the Company issued total 16,026,282 shares of ordinary shares for US$12.48 per share, with total consideration of approximately US$200 million received from two investors at fair market price, including one holder of its Series D Preferred Shares.

On March 18, 2021, the Company completed its IPO of 43,590,000 American Depositary Shares ("ADSs"), each representing one Class A ordinary shares of the Company, at the price of US$21.00 per ADS. On April 20, 2021, the Company's underwriters exercised their over-allotment option to purchase additional 1,486,479 ADSs. The Company received approximately US$904.7 million of proceeds after deducting underwriting discounts commissions and other offering expense from its IPO and related over-allotment option arrangement.

Immediately prior to the completion of its IPO, the Company's authorized share capital was amended as US$50 divided into 1,000,000,000 ordinary shares, among which 600,000,000 authorized ordinary shares were reclassified and re-designated as Class A ordinary shares, 200,000,000 authorized ordinary shares were reclassified and re-designated as Class B ordinary shares, and remaining 200,000,000 authorized ordinary shares were reclassified and re-designated as undesignated shares on a one-for-one basis, of such class or classes (however designated) as the board of directors of the Company may determine in the future.

Immediately prior to the completion of its IPO, a total of 142,400,000 issued and outstanding ordinary shares were converted into Class B ordinary shares on a one-for-one basis. The remaining issued and outstanding ordinary shares and all the Series A, Series A-1, Series B, Series C and Series D Preferred Shares were converted into Class A ordinary shares, in each case on a one-for-one basis immediately prior to the completion of the IPO (the "Dual Class Conversion"). In respect of matters requiring the votes of shareholders, each Class A ordinary share is entitled to one vote and each Class B ordinary share is entitled to 15 votes. Each Class B ordinary share is convertible into one Class A ordinary share at any time by the holder thereof. Class A ordinary shares are not convertible into Class B ordinary shares under any circumstances. Holders of Class A ordinary shares and Class B ordinary shares have the same rights except for voting and conversion rights.

On September 13, 2021 and October 18, 2021, the Company issued 5,000,000 Class A ordinary shares at par to a depository bank reserved solely for the purpose of implementing the Group's Equity Incentive Plan, respectively. The Group accounted for these shares as issued but not outstanding and presented as treasury stocks in the consolidated balance sheets.

On August 30, 2021, the Company's board of directors authorized a share repurchase program under which the Company may repurchase up to US$200 million of American depositary shares ("ADSs") each representing one Class A ordinary shares during a twelve-month period (collectively, the "Share Repurchase Program"). The share repurchases may be made from time to time in the open market at prevailing market prices, in privately negotiated transactions, in block trades and/or through other legally permissible means, depending on market conditions and in accordance with applicable rules and regulations. In the year ended December 31, 2021, the Company repurchased total 7,008,269 ADSs representing 7,008,269 of Class A ordinary shares under the Share Repurchase Program at a weighted average price of US$7.65 per ADS. The remaining authorized amount under the Share Repurchase Program is US$146 million.

On December 23, 2021, 27,000,000 Class B ordinary Shares were converted to Class A ordinary Shares on one-for-one basis for Wang Xueji's personal investment planning (the "First Share Conversion"). On December 28, 2021, 36,000,000 Class B ordinary Shares were converted to Class A ordinary Shares on one-for-one basis for Wang Xueji's personal investment planning (the "Second Share Conversion"). The First Share Conversion and the Second Share Conversion are collectively referred as the "2021 Share Conversion".

As of December 31, 2021, the Company had in aggregate of 491,846,560 Class A ordinary shares issued and 480,241,752 shares Class A outstanding, at a par value of US$0.00005. As of December 31, 2021, the Company had in aggregate of 79,400,000 Class B ordinary shares issued and outstanding, at a par value of US$0.00005.

The activities of the Group's Class A ordinary shares and Class B ordinary shares the year ended December 31, 2021 are summarized as below:

	Class A ordinary shares (US$0.00005 par value)		Class B ordinary shares (US$0.00005 par value)		Total of Class A ordinary shares and Class B ordinary shares (US$0.00005 par value)	
	Number of shares issued	Amount US$	Number of shares issued	Amount US$	Number of shares issued	Amount US$
Balance as of December 31, 2020	—	—	—	—	—	—
Dual Class Conversion	373,770,081	19	142,400,000	7	516,170,081	26
Issuance of ordinary shares upon Initial Public Offering and related over-allotment option, net of cost of issuance	45,076,479	2	—	—	45,076,479	2
2021 Share Conversion	63,000,000	3	(63,000,000)	(3)	—	—
Issuance of ordinary shares reserved for equity incentive plan	10,000,000	1	—	—	10,000,000	1
Balance as of December 31, 2021	491,846,560	25	79,400,000	4	571,246,560	29

16. Convertible Preferred Shares

The Company issued total 65,288,360 shares (with par value of US$0.00005) of Series A convertible preferred shares (the "Series A Preferred Shares") for US$0.1378 per share with total cash consideration of US$8,500 from two investors and US$500 from one investor (totally, cash proceed of US$9,000 for Series A) on December 23, 2014 and March 31, 2015, respectively.

The Company issued total 13,679,270 shares (with par value of US$0.00005) of Series A-1 convertible preferred shares (the "Series A-1 Preferred Shares") for US$0.2193 per share from one investor with total cash proceed of US$3,000 on November 11, 2016.

The Company issued total 87,756,440 shares (with par value of US$0.00005) of Series B convertible preferred shares (the "Series B Preferred Shares") for US$0.3305 per share, with total consideration of US$25,000 from three investors and US$4,000 from two investors (totally cash proceed of US$29,000 for Series B) on August 15, 2017 and September 15, 2017, respectively.

The Company issued total 60,468,490 shares (with par value of US$0.00005) of Series C convertible preferred shares (the "Series C Preferred Shares") for US$1.9019 per share, with total cash consideration of US$59,457 from six investors and US$55,550 from three investors (totally cash proceed of US$115,007 for Series C) on April 16, 2018 and May 2, 2018, respectively.

The Company issued total 52,428,242 shares (with par value of US$0.00005) of Series D convertible preferred shares (the "Series D Preferred Shares") for US$3.4317 (the "Series D Issue Price") per share, with total cash consideration of US$174,918 from three investors and US$5,000 from one investor (totally, cash proceed of US$179,918 for Series D) on September 16, 2019 and November 1, 2019, respectively.

The issuance costs incurred for Series D Preferred Shares were US$1,938.

The above-mentioned Series A, Series A-1, Series B, Series C and Series D Preferred Shares are collectively referred as the "Preferred Shares". Series A, Series A-1, Series B, Series C Preferred Shares are collectively referred as the "Junior Preferred Shares".

On November 1, 2019, the Company repurchased 1,457,003 shares from the holder of Series A-1 Preferred Shares, who originally held total 13,679,270 shares of the Company, for US$2.5738 per share, with total cash consideration of US$3,750 while the original issuance price for Series A-1 Preferred Shares was US$0.2193 per share (the "Series A-1 Repurchase"). These repurchased Series A-1 Preferred Shares were then extinguished.

The key terms of the Preferred Shares issued by the Company are as follows:

Conversion rights

Optional Conversion

Any Preferred Share may, at the option of the holder thereof, be converted at any time after the date of issuance of such shares, without the payment of any additional consideration, into fully-paid and non-assessable ordinary shares of the Company.

Automatic Conversion

The Junior Preferred Shares shall automatically convert into the Company's ordinary shares upon the earlier of i) a Qualified IPO (referring to a public offering of ordinary shares of the Company with an offering price per share at least two times the price per share at which the Series D preferred shares of the Company were issued and total gross proceeds of at least US$400 million), ii) the date specified by written consent or agreement of the holders of a majority of the voting power of the outstanding Junior Preferred Shares. The Series D Preferred Shares shall automatically convert into the Company's ordinary shares upon the earlier of i) a Qualified IPO, ii) the date specified by written consent or agreement of the holders of a majority of the voting power of the outstanding Series D Preferred Shares.

Conversion Price

The number of ordinary shares to be converted into is determined by the quotient of the applicable issue price divided by the then effective applicable conversion price with respect to such particular series of Preferred Shares, which shall initially be the applicable issue price for the Preferred Shares, as the case may be, resulting in an initial conversion ratio for the Preferred Shares of 1:1, and shall be adjusted and readjusted from time to time, including but not limited to share splits and combinations, ordinary share dividends and distributions, reorganizations, mergers, consolidations, reclassifications, exchanges, substitutions, issuance of new securities.

Voting Rights

The holder of a Preferred Share shall be entitled to such number of votes as equals the whole number of ordinary shares into which such holder's collective Preferred Shares are convertible immediately after the close of business on the record date of the determination of the Company's Members (as defined Companies Law of the Cayman Islands) entitled to vote or, if no such record date is established, at the date such vote is taken or any written consent of the Company's Members (as defined Companies Law of the Cayman Islands) is first solicited. The holder of each ordinary share issued and outstanding shall have one vote in respect of each ordinary share held.

Dividend Rights

First, the holder of Series D Preferred Shares shall be entitled to receive noncumulative dividends at the rate of 8% of the Series D Issue Price per annum, when and if declared by the board of directors, payable out of funds or assets when and as such funds or assets become legally available therefore, on a pro rata basis.

Second, after the preferential dividends in respect of the Series D Preferred Shares above have been paid in full or declared and set apart in any fiscal year of the Company, each holder of Junior Preferred Shares shall be entitled to receive non-cumulative dividends at the rate of 8% of applicable issue price per annum with respect to such particular series of Preferred Shares, when and if declared the board of directors, payable out of funds or assets when and as such funds or assets become legally available therefore, on a pari passu basis.

Last, after the preferential dividends in respect of the Series D Preferred Shares and the Junior Preferred Shares above have been paid in full or declared, any additional dividends out of funds legally available therefore may be declared in that fiscal year for the ordinary shares and, if such additional dividends are declared, then such additional dividends shall be declared pro rata on the ordinary shares and Preferred Shares on an as-converted basis.

The Company did not declare any dividends since the issuance of its ordinary shares or Preferred Shares.

Liquidation Rights

Liquidation Preference

First, each holder of Series D Preferred Shares shall be entitled to receive for each Series D Preferred Share held by such holder, on parity with each other and prior and in preference to any distribution of any of the assets or funds of the Company to the holders of Junior Preferred Shares and ordinary shares, the amount (the "Series D Preference Amount") equal to the higher of (i) one hundred percent (100%) of the Series D Issue Price, plus all declared but unpaid dividends on such Series D Preferred Share and (ii) the amount that each Series D Preferred Share would have received had such Series D Preferred Share been converted into Ordinary Share(s) immediately prior to such event.

Second, if there are any assets or funds remaining after the aggregate Series D Preference Amount has been distributed or paid in full to the holders of Series D Preferred Shares, each holder of Junior Preferred Shares shall be entitled to receive for each Junior Preferred Share held by such holder, on parity with each other and prior and in preference to any distribution of any of the assets or funds of the Company to the holders of Ordinary Shares, the amount (the "Junior Preferred Preference Amount") equal to the higher of (i) one hundred percent (100%) of the Applicable Issue Price, plus all declared but unpaid dividends on such Junior Preferred Share and (ii) the amount each Junior Preferred Share would have received had such Junior Preferred Share been converted into ordinary Shares immediately prior to such event.

Third, if there are any assets or funds remaining after the aggregate Preference Amount has been distributed or paid in full to the holders of the Series D Preferred Shares and Junior Preferred Shares, each Angel Investor shall be entitled to receive the amount equal to their applicable initial purchase price of the Company's ordinary shares (the "Angel Preference Amount") prior and in preference to any distribution of any assets or funds of the Company to the holders of the ordinary shares (excluding any Angel Investors).

Last, if there are any assets or funds remaining after the Preference Amount has been distributed or paid in full to the holders of the Series D Preferred Shares, holders of the Junior Preferred Shares and the Angel Investors, the remaining assets and funds of the Company available for distribution to the Members shall be distributed ratably among all holders of Ordinary Shares (excluding any Angel Investors who have received their Angel Preference Amounts, but including any Angel Investor who has forfeited the right to receive its Angel Preference Amount) according to the relative number of Ordinary Shares held by such holder.

Deemed Liquidation Event

Deemed Liquidation Event (as defined in the Company's memorandum and articles of association) include : (1) any consolidation, reorganization, amalgamation or merger of the company and/or its subsidiaries or shareholders of the subsidiaries with or into any person, or any other corporate reorganization or scheme of arrangement, including a sale or acquisition of equity securities of the Company, in which the shareholders of the Company or shareholders of its subsidiaries immediately before such transaction own less than 50% of the voting power of the surviving company immediately after such transaction; or (2) the sale, lease, transfer, exclusive license or other disposition of all or substantially all of the assets of the Company.

Unless waived in writing by the holders of a majority of the outstanding Preferred Shares (voting together as a single class and on an as-if converted basis) and the holders of a majority of outstanding Series D Preferred Shares, a deemed liquidation shall be deemed to be a liquidation, dissolution or winding up of the Company for purposes of Article "Liquidation Rights", and any proceeds, whether in cash or properties, resulting from a Deemed Liquidation Event shall be distributed in accordance with the above liquidation preference.

Consideration of contingent redemption

The Preferred Shares generally are not redeemable outside the Company's control, following the Company's memorandum and articles of association as well as arrangements with the holders of the Preferred Shares. However, it is not guaranteed that under all circumstances, regardless of its probability, a Deemed Liquidation Event will occur solely within the control of the Company and consequently the Preferred Shares may be redeemable upon the occurrence of such event.

Preemptive Rights

The Company grants to each its major investor (each an "Offeree") a right (the "Preemptive Right") to purchase up to its pro rata share of any new securities that the Company may, from time to time after the Initial Closing, propose to sell or issue. For the purposes of the Preemptive Right hereunder, each Offeree's "pro rata share" shall be determined according to the aggregate number of all Ordinary Shares converted or convertible from the Preferred Shares held by such Offeree immediately prior to the issuance of the new securities in relation to the aggregate number of all shares, options and warrants (calculated on a fully-diluted and as converted to ordinary shares basis) then outstanding immediately prior to the issuance of the new securities.

In addition to the investor's Preemptive Right, only one major majority holder of Series D Preferred Shares shall have the right (the "Super Pro Rata Right") to purchase additional shares of new securities that the Company may sell in the next three rounds of equity financings; provided that if the Company, consummates more than three rounds of equity financings prior to the three-year anniversary of the initial closing, such right shall also apply to such additional rounds of equity financings consummated prior to the three-year anniversary of the initial closing.

Modification

There were minor modifications of the Preferred Shares occurred in 2019. The amount of aggregate gross proceeds to the Company which meet the definition of a Qualified IPO was modified upon the issuance of Series D Preferred Shares. However, there were no modification around the major embedded features of the Preferred Shares, including not any adjustment of Liquidation Preference, Voting Rights, or conversion ratio and mechanism to determine conversion price.

The Company assessed the change of fair value of the Preferred Shares immediately before and after the modifications and the change was immaterial.

Accounting for Preferred Shares

The Company classifies the Preferred Shares as mezzanine equity in the consolidated balance sheets because they are contingently redeemable upon the occurrence of an event that is outside of the Company's control, regardless of its probability.

The conversion feature of the Preferred Shares is clearly and closely related to the equity host contract, which does not meet ASC 815-15-25-1 (a), and should not be separated from the host contract and accounted for as a derivative instrument. The liquidation feature of the Preferred Shares does not qualify as derivatives as defined by ASC 815-10-15-83(c), which does not meet ASC 815-15-25-1 (c), and should not be separated from the host contract and accounted for as a derivative instrument.

The Preferred Shares are recorded initially at fair value, net of issuance costs, and carried at the amount recorded at inception and no subsequent changes are needed. For the years ended December 31, 2019, 2020 and 2021, the issuance costs incurred were US$1,938, nil, and nil, respectively.

For the Series A-1 Repurchase incurred in November 2019, the difference of repurchase price in excess of original issuance price was deemed as dividend to convertible preferred shareholders by the Company, which was debited to additional paid in capital of US$3,430 in the absence of retained earnings.

Immediately prior to the completion of the IPO, all classes of Preferred Shares of the Company were converted to ordinary shares upon completion of the IPO (See Note 15 – Ordinary Shares).

The Group's Preferred Shares activities for the years ended December 31, 2019, 2020 and 2021 are summarized as below:

	Series A Shares		Series A-1 Shares		Series B Shares		Series C Shares		Series D Shares		Total	
	Number of shares issued	Amount	Number of shares issued	Amount	Number of shares issued	Amount	Number of shares issued	Amount	Number of shares issued	Amount	Number of shares issued	Amount
Balance as of December 31, 2018	65,288,360	9,000	13,679,270	3,000	87,756,440	29,000	60,468,490	115,007	—	—	227,192,560	156,007
Issuance of Series D Preferred Shares, net of issuance cost	—	—	—	—	—	—	—	—	52,428,242	177,980	52,428,242	177,980
Repurchase of convertible preferred shares	—	—	(1,457,003)	(320)	—	—	—	—	—	—	(1,457,003)	(320)
Balance as of December 31, 2019	65,288,360	9,000	12,222,267	2,680	87,756,440	29,000	60,468,490	115,007	52,428,242	177,980	278,163,799	333,667
Balance as of December 31, 2020	65,288,360	9,000	12,222,267	2,680	87,756,440	29,000	60,468,490	115,007	52,428,242	177,980	278,163,799	333,667
Conversion of redeemable preferred shares	(65,288,360)	(9,000)	(12,222,267)	(2,680)	(87,756,440)	(29,000)	(60,468,490)	(115,007)	(52,428,242)	(177,980)	(278,163,799)	(333,667)
Balance as of December 31, 2021	—	—	—	—	—	—	—	—	—	—	—	—

17. Share-based Compensation

In December 2014, the board of directors of the Company adopted the Company's 2015 Equity Incentive Plan ("the 2015 Plan") and reserved 31,918,690 ordinary shares for issuance under the Plan to grant share-based awards, including restricted shares and share options, to its service providers, defined as the Company's global employees, director and external consultants. In July 2020, the 2015 Plan was modified to allow the Company with the intentions of i) providing for the award of restricted stock units ("RSUs") under the Plan and ii) amending the exercise price of certain outstanding share options held by certain optionees located outside of the U.S. to purchase ordinary shares of the Company (the "Share Option Repricing"), and the number of ordinary shares reserved for the 2015 Plan was modified to 60,778,005 (adjusted in accordance with the Share Split). As of December 31, 2020, the Company had not granted any RSUs to anyone yet, neither had the Company entered any repricing agreement with the optionee under the 2015 Plan yet. As of December 31, 2020, the Company had not granted any restricted shares to anyone yet, except that the part of the ordinary shares issued to the Registered Shareholders with restricted conditions from December 2014 to 2018 was considered as shared based compensation, see below Registered Shareholders' Restricted Shares.

Since adoption of the 2015 Plan, the Company granted options to its global employees, director and external consultants. All options granted have a contractual term of ten years from the grant date, and the vest over a period of four years of continuous service, 50% of the shares subject to the option shall vest on the second anniversary of the vesting commencement date, and the remaining of the shares subject to the option shall vest in equal annual installments over the following two years thereafter on the same day of the month as the vesting commencement date (and if there is no corresponding day, on the last day of the month), subject to the grantee continuing to be a service provider through each such date. The share options granted to PRC employee grantee shall become fully vested under the same service conditions and vesting schedule and, to the extent permissible under applicable law, exercisable upon the occurrence of a Change in Control (as defined in the 2015 Plan).

The Company accounted for the share-based compensation costs on a straight-line bases over the requisite service period for the award based on the fair value on their respectively grant date.

In January 2021, the Company entered into agreements with certain optionees under the 2015 Plan to amend the exercise price of certain outstanding share options held by these optionees located outside of the U.S. to purchase ordinary shares of the Company. As a result of this share option repricing, the Company recorded incremental share-based compensation expense of US$5,861 in its consolidated financial statements for the year ended December 31, 2021 and estimated approximately US$2.95 million to be amortized over the remaining requisite service period for the optionees till year ended December 31, 2024.

On February 21, 2021, the 2015 Plan was amended to increase the number of ordinary shares available and reserved for issuance under the 2015 Plan to 76,778,005 ordinary shares, which was approved by the board of directors of the Company and the shareholders of the Company.

On February 25, 2021, the board of directors of the Company approved further amendment to the 2015 Plan, which provides that starting on January 1, 2022, on the first day of each fiscal year thereafter, the total number of shares available for issuance under the 2015 Plan was increased by an amount equal to the least of (i) 2% of the aggregate number of shares of all classes of ordinary shares of the Company's issued and outstanding on the last day of the immediately preceding fiscal year and (ii) such number of shares as determined by the board of directors.

The Company granted 10,580,000, 9,705,000, and 18,035,000 new share options with four-year requisite service period to its employees and nonemployees for the years ended December 31, 2019, 2020 and 2021, respectively. As of December 31, 2020 and December 31,2021, 48,740,000 and 59,961,539 options were outstanding under the 2015 Plan.

Staring from June 2021, the Company granted RSUs under the 2015 Plan. The Company granted 3,217,000 RSUs with four-year requisite service period to its employees and nonemployees for year ended December 31, 2021. As of December 31, 2021, 3,050,000 RSUs were outstanding under the 2015 Plan.

Share Options

The following table sets forth the share options activity for the years ended December 31, 2019, 2020 and 2021:

	Number of shares	Weighted average exercise price per share	Weighted average grant date fair value per share	Weighted average remaining contractual term	Aggregate intrinsic value
Outstanding as of December 31, 2018	31,010,000	0.17	0.37	7.80	39,483
Granted	10,580,000	0.80	1.85		
Forfeited	(370,000)	0.35	0.76		
Outstanding as of December 31, 2019	41,220,000	0.33	0.75	7.49	93,889
Granted	9,705,000	0.42	2.44		
Forfeited	(2,185,000)	0.62	1.52		
Outstanding as of December 31, 2020	48,740,000	0.33	1.05	7.02	591,879
Granted	18,035,000	0.24	12.55		
Exercised	(5,403,461)	0.14	0.68		
Forfeited	(1,410,000)	0.31	7.21		
Outstanding as of December 31, 2021	59,961,539	0.17	4.40	6.95	364,287

The aggregate intrinsic value is calculated as the difference between the exercise price of the underlying awards and the estimated fair value of the underlying stock at each reporting date (December 31, 2019: US$99,426, December 31, 2020: US$608,251, December 31, 2021: US$374,760).

The Group uses the binomial option pricing model to estimate the fair value of stock options. The assumptions used to value the Company's options grants were as follow:

	As of December 31,		
	2019	2020	2021
Exercise price (US Dollar)	0.79~1.08	0.3~1.08	0.2~2.88
Exercise multiple	2.2~2.8	2.2~2.8	2.2~2.8
Risk-free interest rate	2.08%~2.79 %	0.70%~0.82 %	1.13%~1.79 %
Expected term (in years)	10	10	10
Expected dividend yield	—	—	—
Expected volatility	50.30%~51.13 %	50.66%~50.96 %	50.40%~55.79 %
Expected forfeiture rate (post-vesting)	4.19 %	3.88 %	2.96%~5.83 %
Fair value of the underlying shares on the date of options grants (US Dollar)	1.56~2.66	2.66~3.02	6.25~20.91
Fair value of share option (US Dollar)	1.02~1.98	1.98~2.54	5.78~20.91

As of December 31, 2021, there were US$195,091 of unrecognized share-based compensation expenses related to share options granted by the Company, which were expected to be recognized over a weighted-average vesting period of 1.56 years, respectively.

Restricted Share Units:

The following table sets forth the service – based RSUs activity for the year ended December 31, 2021:

	Number of shares	Weighted average grant date fair value per share
Outstanding as of December 31, 2020	—	—
Granted	3,217,000	8.95
Forfeited	(167,000)	11.80
Outstanding as of December 31, 2021	3,050,000	8.80

There were no activity of service-based RSUs for the years ended December 31, 2019 and 2020, respectively.

As of December 31, 2021, there were US$24,933 of unrecognized share-based compensation expenses related to RSUs granted by the Company, which were expected to be recognized over a weighted-average vesting period of 3.66 years.

Registered Shareholders' Restricted Shares

On December 23, 2014, in connection with the issuance of Series A Preferred Shares, the Registered Shareholders (also as the key member of management) agreed to place 200,000,000 ordinary shares, which were previously issued to them in August 2014 (Note 15), into escrow to be released back to them if specified service condition are met (defined as "Registered Shareholders' Restricted Shares"), which was 25% of the Registered Shareholders' Restricted Shares were immediately vested and the remaining 75% of the Registered Shareholders' Restricted Shares shall be vested annually in equal installments over the next four years. The Company had the right to repurchase these Registered Shareholders' Restricted Shares at par value of ordinary share if the service condition requisite was not satisfied. Pursuant to ASC 718-10-S99, such escrowed share arrangements are presumed to be compensatory and equivalent to a reverse stock split followed by the grant of restricted stock. Accordingly, the 75% of the Registered Shareholders' Restricted Shares that were subject to the service condition were considered shared based compensation.

The fair value of the Registered Shareholders' Restricted Shares was determined at its grant date (December 23, 2014) by the Company and was amortized over the four-year vesting period on straight line basis. By December 2018, all the Registered Shareholders' Restricted Shares were fully vested with total related share-based compensation expenses of US$11,797, which was recorded as expenses before the periods presented and included in the opening balance of accumulated losses of the Group as of January 1, 2019.

18. Income Taxes

Cayman Islands

Under the current tax laws of Cayman Islands, the Company is not subject to income, corporation or capital gains tax, and no withholding tax is imposed upon the payment of dividends.

British Virgin Islands

Under the current laws of the British Virgin Islands, entities incorporated in the British Virgin Islands are not subject to tax on their income or capital gains.

Hong Kong

Under the current Hong Kong Inland Revenue Ordinance, the Group's subsidiaries in Hong Kong are subject to 16.5% Hong Kong profit tax on its taxable income generated from operations in Hong Kong. Additionally, payments of dividends by the subsidiaries incorporated in Hong Kong to the Company are not subject to any Hong Kong withholding tax.

PRC

PRC Enterprise Income Tax ("EIT")

On March 16, 2007, the National People's Congress of PRC enacted the Enterprise Income Tax Law (the "new CIT Law"), under which foreign invested enterprises ("FIEs") and domestic companies would be subject to enterprise income tax ("EIT ") at a uniform rate of 25%. The new CIT law became effective on January 1, 2008. In accordance with the implementation rules of EIT Law, a qualified "High and New Technology Enterprise" ("HNTE") is eligible for a preferential tax rate of 15%. The HNTE certificate is effective for a period of three years. An entity could re-apply for the HNTE certificate when the prior certificate expires.

The WFOE (Hangzhou Tuya Information Technology Co., Ltd.) obtained its HNTE certificate with a valid period of three years in 2018. Therefore, the WFOE is eligible to enjoy a preferential tax rate of 15% from 2018 to 2020 to the extent it has taxable income under the EIT Law, as long as it maintains the HNTE qualification and duly conducts relevant EIT filing procedures with the relevant tax authority. As of December 31,2021, the renewal application of the WFOE's HNTE qualification was completed and the WFOE continues qualifying as an HNTE and entitles to enjoy the 15% beneficial tax rate for the years ended December 31, 2022, 2023 and 2024.

PRC Withholding Income Tax on Dividends

The EIT Law also provides that an enterprise established under the laws of a foreign country or region but whose "de facto management body" is located in the PRC be treated as a resident enterprise for PRC tax purposes and consequently be subject to the PRC income tax at the rate of 25% for its global income. The implementing Rules of the EIT Law merely define the location of the "de facto management body" as "the place where the exercising, in substance, of the overall management and control of the production and business operation, personnel, accounting, properties, etc., of a non-PRC company is located."

The EIT Law also imposes a withholding income tax of 10% on dividends distributed by a FIE to its immediate holding company outside of China, if such immediate holding company is considered as a non-resident enterprise without any establishment or place within China or if the received dividends have no connection with the establishment or place of such immediate holding company within China, unless such immediate holding company's jurisdiction of incorporation has a tax treaty with China that provides for a different withholding arrangement. According to the arrangement between Mainland China and Hong Kong Special Administrative Region on the Avoidance of Double Taxation and Prevention of Fiscal Evasion in August 2006, dividends paid by a FIE in China to its immediate holding company in Hong Kong can be subject to withholding tax at a rate of no more than 5% if the immediate holding company in Hong Kong owns directly at least 25% of the shares of the FIE and could be recognized as a Beneficial Owner of the dividend from PRC tax perspective.

As of December 31, 2020 and 2021, the Company did not record any withholding tax on the retained earnings of its subsidiaries in the PRC as the Group does not have any plan to require its PRC subsidiaries to distribute their retained earnings and intends to retain them to operate and expand its business in the PRC.

United States

The Company's subsidiary in California, United States is subject to U.S. federal corporate tax and California corporate franchise tax on its taxable income as reported in its statutory financial statements adjusted in accordance with relevant U.S. tax laws. The applicable U.S. federal corporate tax rate is 21% and the California corporate franchise tax rate is 8.84% or minimum of $0.8, whatever is larger in 2019,2020 and 2021.

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act makes broad and complex changes to the U.S. tax code including, but not limited to: (1) reducing the U.S. federal corporate tax rate from 35% to 21%; (2) requiring companies to pay a one-time transition tax on certain unrepatriated earnings of foreign subsidiaries; (3) generally eliminating U.S. federal income taxes on dividends from foreign subsidiaries; (4) requiring a current inclusion in U.S. federal taxable income of certain earnings of controlled foreign corporations; (5) eliminating the corporate alternative minimum tax ("AMT") and changing how existing AMT credits can be realized; (6) creating the base erosion anti-abuse tax ("BEAT"), a new minimum tax; (7) creating a new limitation on deductible interest expense; and (8) changing rules related to uses and limitations of net operating loss carry-forwards created in tax years beginning after December 31, 2017. In addition, the California corporate franchise tax remained the same after the enactment of the Tax Act. The Company assessed the impact of Tax Act and concluded that it was not material to the Company.

As the Group incurred income tax expense mainly from PRC tax jurisdictions, the following information is based mainly on PRC income taxes.

Composition of income tax expense

The components of loss before tax are as follow:

	Year Ended December 31,		
	2019	2020	2021
Loss before tax			
Loss from PRC entities	(60,761)	(54,776)	(150,478)
Loss from overseas entities	(9,592)	(11,930)	(24,456)
Total loss before tax	(70,353)	(66,706)	(174,934)

	Year Ended December 31,		
	2019	2020	2021
Current income tax expense	124	206	490
Deferred income tax	—	—	—
Total income tax expense	124	206	490

Reconciliation of the differences between statutory tax rate and the effective tax rate

Reconciliation of the differences between the statutory EIT rate applicable to losses of the consolidated entities and the income tax expenses of the Group:

	Year Ended December 31,		
	2019	2020	2021
PRC Statutory income tax rate	25.0%	25.0%	25.0%
Effect on tax rates in different tax jurisdiction	-3.2%	-2.6%	-2.0%
Income tax on tax holiday(1)	-8.6%	-3.0%	-2.2%
Additional deduction for research and development expenditures	4.4%	8.9%	7.2%
Share-based compensation	-1.1%	-2.1%	-8.4%
Permanent book-tax differences	-0.7%	-2.2%	6.2%
Change in valuation allowance(2)	-16.0%	-24.3%	-26.0%
Effective tax rates	-0.2%	-0.3%	-0.2%

(1) The income tax on tax holidays represents the effect of preferential income tax rate that the WFOE qualified as an HNTE is entitled to enjoy the beneficial tax rate of 15%.

(2) Valuation allowance for the years ended December 31, 2019, 2020 and 2021 are related to the deferred tax assets of certain group entities which reported losses. The Group believes that it is more likely than not that the deferred tax assets of these entities will not be utilized. Therefore, valuation allowance has been provided.

Deferred tax assets and deferred tax liabilities

The following table sets forth the significant components of the deferred tax assets:

	As of December 31,		
	2019	2020	2021
Deferred tax assets			
Net accumulated losses-carry forward	19,310	33,277	76,944
Payroll liabilities	1,795	3,836	5,438
Inventory write-downs	43	183	402
Receivables allowances	57	83	171
Other deductible temporary difference	—	26	9
Less: valuation allowance	(21,205)	(37,405)	(82,964)
Total deferred tax assets	—	—	—

As of December 31, 2021, the Group had tax losses carry forwards of approximately US$376,193, which mainly arose from its subsidiaries established in the PRC. These tax losses carry forwards from PRC entities will expire during the period from 2022 to 2031 as follows:

At December 31, 2021	US$
2022	481
2023	120
2024	248
2025	65,168
2026	115,705
2027	5,698
2028	34,926
2029	74,954
2030	41,038
2031	37,855
Total tax losses carry forwards	376,193

Movement of valuation allowance

	As of December 31,		
	2019	2020	2021
Balance at beginning of the year	9,914	21,205	37,405
Changes of valuation allowance(1)	11,291	16,200	45,559
Balance at end of the year	21,205	37,405	82,964

(1) Valuation allowances have been provided against deferred tax assets when the Group determines that it is more likely than not that the deferred tax assets will not be utilized in the future. In making such determination, the Group evaluates a variety of factors including the Group's entities' operating history, accumulated deficit, existence of taxable temporary differences and reversal periods. As of December 31, 2020 and 2021, full valuation allowances on deferred tax assets were provided because it was more likely than not that the Group will not be able to utilize tax loss carry forwards and other temporary tax difference generated by its unprofitable subsidiaries and the VIE.

19. Basic and Diluted Net Loss per Share

Basic and diluted loss per share have been calculated in accordance with ASC 260 on computation of earnings (loss) per share for each of the year ended December 31, 2019 and 2020, and 2021 are calculated as follows:

	Year Ended December 31,		
	2019	2020	2021
Basic and diluted net loss per share calculation			
Numerator:			
Net loss attributable to Tuya Inc.'s ordinary shareholders, basic and diluted	(73,907)	(66,912)	(175,424)
Denominator:			
Weighted-average ordinary shares outstanding, basic and diluted	221,980,000	221,980,000	489,149,533
Net loss per share attributable to ordinary shareholders:			
Basic	(0.33)	(0.30)	(0.36)
Diluted	(0.33)	(0.30)	(0.36)

The following ordinary shares equivalent were excluded from the computation of diluted net loss per ordinary share for the periods presented because including them would have had an anti-dilutive effect:

	As of December 31,		
	2019	2020	2021
Preferred Shares – weighted shares	279,377,303	278,163,799	—
Share option and RSU – weighted shares	35,867,233	44,743,156	61,989,697

20. Commitments and Contingencies

(a) Capital and other commitments

There are no future minimum capital commitments as of December 31, 2020 and 2021.

(b) Operating lease commitment

The Group had outstanding commitments on several non-cancellable operating lease agreements. Operating lease commitment within one year or less lease term, for which the Group elected not recognize any lease liability or right-of-use asset, therefore not yet reflected in the consolidated financial statements as of December 31, 2020 and 2021 were US$48 and US$99, respectively.

(c) Services purchase commitment

As of December 31, 2020, the Group's products and services purchase commitments were as follows:

	Total	Less Than 1 year	1-3 years
Purchase obligations(i)	2,382	—	2,382

As of December 31, 2021, the Group's services purchase commitments were as follows:

	Total	Less Than 1 year	1-3 years	3-5 years
Purchase obligations(i)	31,771	6,146	15,000	10,625

(i) Purchase obligations represent US$2,382 of remaining non-cancelable contractual commitments as of December 31, 2020, related to one of the Group's third-party cloud infrastructure agreement, under which the Group committed to spend an aggregate of at least US$3,000 between May 1, 2019 and April 30, 2022 with no minimum purchase commitment during any year. The Group had made payments totaling US$618 under this agreement as of December 31, 2020.

Purchase obligations represent US$31,771 of remaining non-cancelable contractual commitments as of December 31, 2021, related to one of the Group's third-party cloud infrastructure agreement, under which the Group committed to spend an aggregate of at least US$37,500 between June 1, 2021 and May 31, 2026 with minimum purchase commitment. The Group had made payments totaling US$5,729 under this agreement as of December 31, 2021.

(d) Contingencies

From time to time, the Group is subject to legal proceedings, investigations and claims incidental to the conduct of its business. As of December 31, 2020 and 2021, the Group was not involved in any legal or administrative proceedings that the Group believes may have a material adverse impact on the Group's business, balance sheets or results of operations and cash flows.

21. Related Party Transactions

The table below sets forth the major related party and their relationships with the Company as of December 31, 2021:

Name of related party	Relationship with the Group
Wang Xueji and other four individuals	Registered Shareholders

There has been no related party transaction during year ended December 31, 2019. On December 30, 2020, the Company received the subscription amount for ordinary shares issued of US$10 from the Registered Shareholders. There was no related party transaction for the year ended December 31, 2021.

22. Subsequent Events

The Company has evaluated subsequent events through April 28, 2022 which is the date these consolidated financial statements are issued.

In January 2022, the Company granted total 1,045,000 share options and 2,479,500 RSUs under the 2015 Plan to its employees and non-employees, which is only subject to service conditions. As a result of this share option grant, the Company estimated total share-based compensation expense of approximately US$ 19,045 to be recorded in its consolidated financial statements over the vesting period of four years starting from 2022.

23. Statutory Reserves and Restricted Net Assets

Relevant PRC laws and regulations permit payments of dividends by the Group's entities incorporated in the PRC only out of their retained earnings, if any, as determined in accordance with PRC accounting standards and regulations. In addition, the Group's entities in the PRC are required to annually appropriate 10% of their net after-tax income to the statutory general reserve fund prior to payment of any dividends, unless such reserve funds have reached 50% of their respective registered capital. As a result of these and other restrictions under PRC laws and regulations, the Group's entities and the VIE subsidiary incorporated in the PRC are restricted in their ability to transfer a portion of their net assets to the Company either in the form of dividends, loans or advances, which restricted portion as calculated under U.S. GAAP amounted to US$41,776 and US$283,655 as of December 31, 2020 and 2021. There are no significant differences between U.S. GAAP and PRC accounting standards in connection with the reported net assets of the legally owned subsidiaries in the PRC and the VIE. Even though the Company currently does not require any such dividends, loans, or advances from the PRC entities for working capital and other funding purposes, the Company may in the future require additional cash resources from them due to changes in business conditions, to fund future acquisitions and development, or merely to declare and pay dividends or distributions to its shareholders. Except for the above, there is no other restriction on use of proceeds generated by the Group's subsidiaries and the VIE to satisfy any obligations of the Company.

For the year ended December 31, 2021, the Company performed a test on the restricted net assets of subsidiaries and VIE in accordance with Securities and Exchange Commission Regulation S-X Rule 4-08 (e) (3), "General Notes to Financial Statements" and concluded that the restricted net assets exceeded 25% of the consolidated net assets of the Company as of December 31, 2021 and the condensed financial information of the Company (referred to as the "Parent Company" below) are required to be presented.

Condensed Financial Information of the Parent Company

(All amounts in US$ thousands ("US$"), except for share and per share data, unless otherwise noted)

Balance Sheet

	As of December 31,	
	2020	2021
	US$	US$
ASSETS		
Current assets:		
Cash and cash equivalents	20	15,833
Amounts due from subsidiaries	174,753	346,859
Prepayments and other current assets	—	13,345
Total current assets	174,773	376,037
Non -current assets:		
Investment in subsidiaries and VIE	—	753,005
Other non-current assets	182	—
Total non-current assets	182	753,005
Total assets	174,955	1,129,042
LIABILITIES, MEZZANINE EQUITY AND SHAREHOLDERS' DEFICIT/(EQUITY)		
Liabilities		
Accruals and other current liabilities	349	6,897
Amounts due to subsidiaries and VIE	673	—
Other non-current liabilities	—	8,484
Investment deficit in subsidiaries and VIE	4,933	—
Total liabilities	5,955	15,381
Mezzanine equity		
Series A convertible preferred shares (US$0.00005 par value; 65,288,360 shares authorized, issued and outstanding as of December 31, 2020; nil shares authorized, issued and outstanding as of December 31, 2021)	9,000	—
Series A-1 convertible preferred shares (US$0.00005 par value; 15,959,140 shares authorized as of December 31, 2020; 12,222,267 shares issued and outstanding as of December 31, 2020; nil shares authorized, issued and outstanding as of December 31, 2021)	2,680	—
Series B convertible preferred shares (US$0.00005 par value; 90,782,550 shares authorized as of December 31, 2020; 87,756,440 shares issued and outstanding as of December 31, 2020; nil shares authorized, issued and outstanding as of December 31, 2021)	29,000	—
Series C convertible preferred shares (US$0.00005 par value; 60,469,840 shares authorized as of December 31, 2020; 60,468,490 shares issued and outstanding as of December 31, 2020; nil shares authorized, issued and outstanding as of December 31, 2021)	115,007	—
Series D convertible preferred shares (US$0.00005 par value; 75,000,000 shares authorized as of December 31, 2020; 52,428,242 shares issued and outstanding as of December 31, 2020; nil shares authorized, issued and outstanding as of December 31, 2021)	177,980	—
Total mezzanine equity	333,667	—
Shareholders' (deficit)/equity:		
Ordinary shares (US$0.00005 par value; 692,500,110 shares authorized, 221,980,000 shares issued and outstanding as of December 31, 2020; nil shares authorized, issued and outstanding as of December 31, 2021)	11	—
Class A ordinary shares (US$0.00005 par value; nil and 600,000,000 shares authorized as of December 31, 2020 and 2021, respectively; nil and 491,846,560 shares issued as of December 31, 2020 and 2021, respectively; nil and 480,241,752 shares outstanding as of December 31, 2020 and 2021, respectively)	—	25
Class B ordinary shares (US$0.00005 par value; nil and 200,000,000 shares authorized as of December 31, 2020 and 2021, respectively; nil and 79,400,000 shares issued and outstanding as of December 31, 2020 and 2021, respectively)	—	4
Treasury stock (US$0.00005 par value; nil and 11,604,808 shares as of December 31, 2020 and 2021, respectively)	—	(46,930)
Additional paid-in capital	27,315	1,526,140
Accumulated other comprehensive (loss)/income	481	2,320
Accumulated deficit	(192,474)	(367,898)
Total shareholders' (deficit)/equity	(164,667)	1,113,661
Total liabilities, mezzanine equity and shareholders' (deficit)/equity	174,955	1,129,042

Statement of Comprehensive Loss

	As of December 31,		
	2019	2020	2021
Operation expense			
General and administrative expenses	(288)	(784)	(2,927)
Share of loss of subsidiaries and VIE	(71,359)	(66,982)	(174,455)
Other operating expenses, net	(7)	(7)	—
Total operating expenses	(71,654)	(67,773)	(177,382)
Other non-operating income, net	—	—	1,958
Financial income, net	1,179	861	—
Foreign exchange loss	(2)	—	—
Loss before income tax expense	(70,477)	(66,912)	(175,424)
Net loss	(70,477)	(66,912)	(175,424)
Deemed dividend from Preferred Shareholders	(3,430)	—	—
Net loss attributable to ordinary shareholders	(73,907)	(66,912)	(175,424)
Net loss	(70,477)	(66,912)	(175,424)
Other comprehensive (loss)/income			
Foreign currency translation	(428)	2,882	1,482
Changes in fair value of long-term investments	—	—	357
Total comprehensive loss	(70,905)	(64,030)	(173,585)

Statement of Cash Flows

	As of December 31,		
	2019	2020	2021
Net cash (used in)/generated from operating activities	(728)	498	11,255
Payment for short-term investments	(94,910)	—	—
Proceeds from disposal of short-term investments	95,967	—	—
Advance to, and investment in subsidiaries	(23,329)	(151,719)	(1,037,244)
Net cash used in investing activities	(22,272)	(151,719)	(1,037,244)
Proceeds from issuance of Class A ordinary shares upon Initial Public Offering and related over-allotment option, net of cost of issuance	—	—	904,732
Payment for repurchase of ordinary shares	—	—	(64,000)
Proceeds from issuance of ordinary shares prior to Initial Public Offering	—	—	200,000
Proceeds from exercise of share options	—	—	1,070
Proceeds from issuance of convertible preferred shares, net of issuance costs	177,980	—	—
Payment for repurchase of convertible preferred shares	(3,750)	—	—
Subscription contributions from shareholders	—	10	—
Net cash generated from financing activities	174,230	10	1,041,802
Effect of exchange rate changes on cash and cash equivalents	—	—	—
Net increase/(decrease) in cash and cash equivalents	151,230	(151,211)	15,813
Cash and cash equivalents at beginning of the year	1	151,231	20
Cash and cash equivalents at end of the year	151,231	20	15,833

Exhibit 2.4

Description of rights of each class of securities registered under Section 12 of the Securities Exchange Act of 1934 (the "Exchange Act")

American Depositary Shares ("ADSs") , each representing one Class A ordinary share, of Tuya Inc. ("we," "our," "our company," or "us") are listed and traded on the New York Stock Exchange ("NYSE") and, in connection therewith, the Class A ordinary shares are registered under Section 12(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). This exhibit contains a description of the rights of (i) the holders of Class A ordinary shares and (ii) the holders of the ADSs. Class A ordinary shares underlying the ADSs are held by The Bank of New York Mellon, as depositary, and holders of ADSs will not be treated as holders of Class A ordinary shares.

Description of Class A Ordinary Shares

The following is a summary of material provisions of our currently effective eighth amended and restated memorandum and articles of association (the "Memorandum and Articles of Association"), as well as the Companies Act (As Revised) of the Cayman Islands (the "Companies Act") insofar as they relate to the material terms of the Class A ordinary shares. Notwithstanding this, because it is a summary, it may not contain all the information that you may otherwise deem important. For more complete information, you should read the entire Memorandum and Articles of Association, which has been initially filed with the Securities and Exchange Commission (the "SEC") as an exhibit to our Registration Statement on Form F-1 (File No. 333-253575), as amended, on February 26, 2021.

Type and Class of Securities (Item 9.A.5 of Form 20-F)

Our ordinary shares are issued in registered form and are issued when registered in our register of members. We may not issue share to bearer. Each Class A ordinary share has US$0.00005 par value. The number of Class A ordinary shares that have been issued as of the last day of the financial year ended December 31, 2021 is provided on the cover of our annual report on Form 20-F filed on April 28, 2022 (the "2021 Form 20-F"). Our Class A ordinary shares may be held in either certificated or uncertificated form.

Preemptive Rights (Item 9.A.3 of Form 20-F)

Our shareholders do not have preemptive rights.

Limitations or Qualifications (Item 9.A.6 of Form 20-F)

We have a dual-class voting structure such that our ordinary shares consist of Class A ordinary shares and Class B ordinary shares. Each Class A ordinary share shall be entitled to one vote on all matters subject to a vote at general meetings of the shareholders, and each Class B ordinary share shall be entitled to 15 votes on all matters subject to a vote at general meetings of the shareholders. Holders of Class A ordinary shares and Class B ordinary shares shall, at all times, vote together as one class on all matters submitted to a vote by the members at any such general meeting. Due to the super voting power of Class B ordinary shareholders, the voting power of the Class A ordinary shares may be materially limited. See also "—Requirements to Change the Rights of Holders of Class A Ordinary Shares (Item 10.B.4 of Form 20-F)—Variations of Rights of Shares."

Rights of Other Types of Securities (Item 9.A.7 of Form 20-F)

Not applicable.

Rights of Class A Ordinary Shares (Item 10.B.3 of Form 20-F)

General

Holders of ordinary shares will have the same rights. All of our issued and outstanding ordinary shares are fully paid and non-assessable. Our shareholders who are non-residents of the Cayman Islands may freely hold and transfer their ordinary shares.

Dividends

The holders of our ordinary shares are entitled to such dividends as may be declared by our board of directors subject to our eighth amended and restated memorandum and articles of association and the Companies Act. Our eighth amended and restated articles of association provide that dividends may be declared and paid out of our profits, realized or unrealized, or from any reserve set aside from profits which our board of directors determine is no longer needed. Dividends may also be declared and paid out of share premium account or any other fund or account which can be authorized for this purpose in accordance with the Companies Act. No dividend may be declared and paid unless our directors determine that, immediately after the payment, we will be able to pay our debts as they become due in the ordinary course of business and we have funds lawfully available for such purpose.

Classes of Ordinary Shares

Our ordinary shares are divided into Class A ordinary shares and Class B ordinary shares. Except for conversion rights and voting rights, the Class A ordinary shares and Class B ordinary shares shall carry equal rights and rank *pari passu* with one another, including but not limited to the rights to dividends and other capital distributions.

Conversion

A Class B ordinary share is convertible into one Class A ordinary share at any time by the holder thereof, while Class A ordinary shares are not convertible into Class B ordinary shares under any circumstances. Upon any sale, transfer, assignment or disposition of Class B ordinary shares by a holder thereof to any person which is not an affiliate of such holder, or upon a change of beneficial ownership of any Class B ordinary shares as a result of which any person who is not an affiliate of the holders of such ordinary shares becomes a beneficial owner of such ordinary shares, such Class B ordinary shares shall be automatically and immediately converted into an equal number of Class A ordinary shares. The Class B ordinary shares, if any, beneficially owned by Mr. Xueji (Jerry) Wang and his affiliates, shall be automatically and immediately converted into an equal number of Class A ordinary shares upon Mr. Xueji (Jerry) Wang ceasing to be our director. For the avoidance of doubt, (i) a sale, transfer, assignment or disposition shall be effective upon our company's registration of such sale, transfer, assignment or disposition in ourregister of members; (ii) the creation of any pledge, charge, encumbrance or other third-party right of whatever description on any Class B ordinary shares to secure any contractual or legal obligations shall not be deemed as a sale, transfer, assignment or disposition unless and until any such pledge, charge, encumbrance or other third-party right is enforced and results in the third party who is not an affiliate of the relevant member becoming a beneficial owner of the relevant Class B ordinary shares in which case all the related Class B ordinary shares shall be automatically and immediately converted into the same number of Class A ordinary shares; (iii) any sale, transfer, assignment or disposition of any Class B ordinary shares by a holder thereof to any person which is a beneficial owner of Class B ordinary shares shall not trigger the automatic conversion

of such Class B ordinary shares into Class A ordinary shares; and (iv) in the event that Mr. Liaohan (Leo) Chen ceases to be a director or an executive officer or employee of our company, any and all of the Class B ordinary shares beneficially owned by Mr. Liaohan (Leo) Chen and any affiliate of Mr. Liaohan (Leo) Chen shall be automatically and immediately converted into an equal number of Class A ordinary shares; provided that in the event that Mr. Liaohan (Leo) Chen ceases to be a director or an executive officer or employee of the Company and has, prior to or concurrently with his ceasing to be in such position, delegated the voting power on any of the Class B ordinary shares that he beneficially owns to Mr. Xueji (Jerry) Wang and/or an affiliate of Mr. Xueji (Jerry) Wang through voting proxy, voting agreement or similar arrangement, the automatic conversion into Class A ordinary shares of such Class B ordinary shares the voting power of which is so delegated shall not be triggered. For the purpose of the foregoing sentence, an "affiliate" of a given shareholder means any other person that, directly or indirectly, controls, is controlled by or is under common control with such person, and for the purposes of the foregoing definition of "affiliate," "control" means, in relation to any person, the power or authority, whether exercised or not, to direct the business, management and policies of such person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise; provided, that such power or authority shall conclusively be presumed to exist upon possession of beneficial ownership or power to direct the vote of more than 50% of the votes entitled to be cast at a meeting of the members or shareholders of such person or power to control the composition of a majority of the board of directors of such person.

Voting Rights

In respect of all matters subject to a shareholders' vote, holders of Class A ordinary shares and Class B ordinary shares shall, at all times, vote together as one class on all matters submitted to a vote by the members. Each Class A ordinary share shall be entitled to one vote on all matters subject to the vote at general meetings of our company, and each Class B ordinary share shall be entitled to 15 votes on all matters subject to the vote at general meetings of our company. Voting at any meeting of shareholders shall be determined by poll and not on a show of hands.

An ordinary resolution to be passed at a meeting by the shareholders requires the affirmative vote of a simple majority of all votes, calculated on a fully converted basis, cast by those shareholders entitled to vote who are present in person or by proxy at a general meeting, while a special resolution requires the affirmative vote of not less than two-thirds of all votes, calculated on a fully converted basis, cast by those shareholders entitled to vote who are present in person or by proxy at a general meeting. Subject to the provisions of the Companies Act and our eighth amended and restated memorandum and articles of association, a special resolution will be required for important matters such as a change of our company's name or making changes to our eighth amended and restated memorandum and articles of association.

General Meetings of Shareholders

A quorum required for a meeting of shareholders consists of shareholders holding a majority of all votes attaching to the issued and outstanding shares entitled to vote at general meetings present in person or by proxy or, if a corporation or other non-natural person, by its duly authorized representative. Our eighth amended and restated memorandum and articles of association provide that we may (but are not obliged to) in each year hold a general meeting as our annual general meeting in which case we will specify the meeting as such in the notices calling it, and the annual general meeting will be held at such time and place as may be determined by our directors. We, however, will hold an annual shareholders' meeting during each fiscal year, as required by the Listing Rules at the NYSE. Each general meeting, other than an annual general meeting, shall be an extraordinary general meeting. Shareholders' annual general meetings and any other general meetings of our shareholders may be called by a majority of our

board of directors or our chairman or upon a requisition of shareholders holding at the date of deposit of the requisition not less than one-third of all votes attaching to the issued and outstanding shares entitled to vote at general meetings, in which case the directors are obliged to call such meeting and to put the resolutions so requisitioned to a vote at such meeting; however, our eighth amended and restated memorandum and articles of association do not provide our shareholders with any right to put any proposals before annual general meetings or extraordinary general meetings not called by such shareholders. Advance notice of at least seven (7) business days is required for the convening of our annual general meeting and other general meetings unless such notice is waived in accordance with our articles of association.

Transfer of Ordinary Shares

Subject to the restrictions in our eighth amended and restated memorandum and articles of association as set out below, any of our shareholders may transfer all or any of his or her ordinary shares by an instrument of transfer in the usual or common form or any other form approved by our board of directors.

Our board of directors may, in its absolute discretion, decline to register any transfer of any ordinary share which is not fully paid up or on which we have a lien. Our board of directors may also decline to register any transfer of any ordinary share unless:

- the instrument of transfer is lodged with us, accompanied by the certificate for the ordinary shares to which it relates and such other evidence as our board of directors may reasonably require to show the right of the transferor to make the transfer;
- the instrument of transfer is in respect of only one class of shares;
- the instrument of transfer is properly stamped, if required;
- in the case of a transfer to joint holders, the number of joint holders to whom the ordinary share is to be transferred does not exceed four; and
- a fee of such maximum sum as the NYSE may determine to be payable or such lesser sum as our directors may from time to time require is paid to us in respect thereof.

If our directors refuse to register a transfer they shall, within three months after the date on which the instrument of transfer was lodged, send to each of the transferor and the transferee notice of such refusal.

The registration of transfers may, after compliance with any notice required of the NYSE, be suspended and the register closed at such times and for such periods as our board of directors may from time to time determine, provided, however, that the registration of transfers shall not be suspended nor the register closed for 30 more than days in any year as our board may determine.

Liquidation

On the winding up of our company, if the assets available for distribution amongst our shareholders shall be more than sufficient to repay the whole of the share capital at the commencement of the winding up, the surplus shall be distributed amongst our shareholders in proportion to the par value of the shares held by them at the commencement of the winding up, subject to a deduction from those shares in respect of which there are monies due, of all monies payable to our company for unpaid

calls or otherwise. If our assets available for distribution are insufficient to repay all of the paid-up capital, the assets will be distributed so that the losses are borne by our shareholders in proportion to the par value of the shares held by them.

Calls on Ordinary Shares and Forfeiture of Ordinary Shares

Our board of directors may from time to time make calls upon shareholders for any amounts unpaid on their ordinary shares in a notice served to such shareholders at least 14 clear days prior to the specified time of payment. The ordinary shares that have been called upon and remain unpaid are subject to forfeiture.

Redemption, Repurchase and Surrender of Ordinary Shares

We may issue shares on terms that such shares are subject to redemption, at our option or at the option of the holders thereof, on such terms and in such manner as may be determined, before the issue of such shares, by our board of directors. Our company may also repurchase any of our shares provided that the manner and terms of such purchase have been approved by our board of directors, or are otherwise authorized by our eighth amended and restated memorandum and articles of association. Under the Companies Act, the redemption or repurchase of any share may be paid out of our company's profits or out of the proceeds of a fresh issue of shares made for the purpose of such redemption or repurchase, or out of capital (including share premium account and capital redemption reserve) if the company can, immediately following such payment, pay its debts as they fall due in the ordinary course of business. In addition, under the Companies Act no such share may be redeemed or repurchased (a) unless it is fully paid up, (b) if such redemption or repurchase would result in there being no shares outstanding, or (c) if the company has commenced liquidation. In addition, our company may accept the surrender of any fully paid share for no consideration.

Inspection of Books and Records

Holders of our ordinary shares have no general right under Cayman Islands law to inspect or obtain copies of our list of shareholders or our corporate records (other than our memorandum and articles of association, our register of mortgages and charges, and copies of any special resolutions passed by our shareholders). However, we will provide our shareholders with annual audited financial statements.

Requirements to Change the Rights of Holders of Class A Ordinary Shares (Item 10.B.4 of Form 20-F)

Variations of Rights of Shares

If at any time our share capital is divided into different classes or series of shares, the rights attached to any class or series of shares (unless otherwise provided by the terms of issue of the shares of that class or series), whether or not our company is being wound- up, may be varied with the consent in writing of the holders of not less than a majority of the issued shares of that class or series or with the sanction of a special resolution at a separate meeting of the holders of the shares of the class or series. The rights conferred upon the holders of the shares of any class issued shall not, unless otherwise expressly provided by the terms of issue of the shares of that class, be deemed to be varied by the creation or issue of further shares ranking *pari passu* with such existing class of shares.

Limitations on the Rights to Own Class A Ordinary Shares (Item 10.B.6 of Form 20-F)

There are no limitations under the laws of the Cayman Islands or under our eighth

memorandum and articles of association that limit the right of non-resident or foreign owners to hold or vote Class A ordinary shares.

Provisions Affecting Any Change of Control (Item 10.B.7 of Form 20-F)

Anti-Takeover Provisions

Some provisions of our eighth memorandum and articles of association may discourage, delay or prevent a change of control of our company or management that shareholders may consider favorable, including provisions that authorize our board of directors to issue preferred shares in one or more series and to designate the price, rights, preferences, privileges and restrictions of such preferred shares without any further vote or action by our shareholders, and limit the ability of shareholders to requisition and convene general meetings of shareholders.

However, under Cayman Islands law, our directors may only exercise the rights and powers granted to them under our eighth memorandum and articles of association for a proper purpose and for what they believe in good faith to be in the best interests of our company.

Issuance of Additional Shares

Our eighth memorandum and articles of association authorize our board of directors to issue additional ordinary shares from time to time as our board of directors shall determine, to the extent of available authorized but unissued shares.

Our eighth memorandum and articles of association also authorize our board of directors to establish from time to time one or more series of preferred shares and to determine, with respect to any series of preferred shares, the terms and rights of that series, including:

- the designation of the series;
- the number of shares of the series;
- the dividend rights, dividend rates, conversion rights, voting rights; and
- the rights and terms of redemption and liquidation preferences.

Our board of directors may issue preferred shares without action by our shareholders to the extent authorized but unissued. Issuance of these shares may dilute the voting power of holders of ordinary shares.

Ownership Threshold (Item 10.B.8 of Form 20-F)

There are no provisions under our eighth memorandum and articles of association that require our company to disclose shareholder ownership above any particular ownership threshold.

Differences between the Law of Different Jurisdictions (Item 10.B.9 of Form 20-F)

The Companies Act is derived, to a large extent, from the older Companies Acts of England, but does not follow many recent English law statutory enactments. In addition, the Companies Act differs from laws applicable to United States corporations and their shareholders. Set forth below is a

summary of the significant differences between the provisions of the Companies Act applicable to us and the laws applicable to companies incorporated in the State of Delaware.

Mergers and Similar Arrangements

The Companies Act permits mergers and consolidations between Cayman Islands companies and between Cayman Islands companies and non-Cayman Islands companies. For these purposes, (a) "merger" means the merging of two or more constituent companies and the vesting of their undertaking, property and liabilities in one of such companies as the surviving company, and (b) a "consolidation" means the combination of two or more constituent companies into a consolidated company and the vesting of the undertaking, property and liabilities of such companies to the consolidated company. In order to effect such a merger or consolidation, the directors of each constituent company must approve a written plan of merger or consolidation, which must then be authorized by (a) a special resolution of the shareholders of each constituent company, and (b) such other authorization, if any, as may be specified in such constituent company's articles of association. The written plan of merger or consolidation must be filed with the Registrar of Companies of the Cayman Islands together with a declaration as to the solvency of the consolidated or surviving company, a declaration as to the assets and liabilities of each constituent company and an undertaking that a copy of the certificate of merger or consolidation will be given to the members and creditors of each constituent company and that notification of the merger or consolidation will be published in the Cayman Islands Gazette. Court approval is not required for a merger or consolidation which is effected in compliance with these statutory procedures.

A merger between a Cayman parent company and its Cayman subsidiary or subsidiaries does not require authorization by a resolution of shareholders of that Cayman subsidiary if a copy of the plan of merger is given to every member of that Cayman subsidiary to be merged unless that member agrees otherwise. For this purpose a company is a "parent" of a subsidiary if it holds issued shares that together represent at least 90% of the votes at a general meeting of the subsidiary.

The consent of each holder of a fixed or floating security interest over a constituent company is required unless this requirement is waived by a court in the Cayman Islands.

Save in certain limited circumstances, a shareholder of a Cayman constituent company who dissents from the merger or consolidation is entitled to payment of the fair value of his shares (which, if not agreed between the parties, will be determined by the Cayman Islands court) upon dissenting to the merger or consolidation, provide the dissenting shareholder complies strictly with the procedures set out in the Companies Act. The exercise of dissenter rights will preclude the exercise by the dissenting shareholder of any other rights to which he or she might otherwise be entitled by virtue of holding shares, save for the right to seek relief on the grounds that the merger or consolidation is void or unlawful.

Separate from the statutory provisions relating to mergers and consolidations, the Companies Act also contains statutory provisions that facilitate the reconstruction and amalgamation of companies by way of schemes of arrangement, provided that the arrangement is approved by a majority in number of each class of shareholders and creditors with whom the arrangement is to be made, and who must in addition represent three-fourths in value of each such class of shareholders or creditors, as the case may be, that are present and voting either in person or by proxy at a meeting, or meetings, convened for that purpose. The convening of the meetings and subsequently the arrangement must be sanctioned by the Grand Court of the Cayman Islands. While a dissenting shareholder has the right to express to the court the view that the transaction ought not to be approved, the court can be expected to approve the arrangement if it determines that:

- the statutory provisions as to the required majority vote have been met;
- the shareholders have been fairly represented at the meeting in question and the statutory majority are acting bona fide without coercion of the minority to promote interests adverse to those of the class;
- the arrangement is such that may be reasonably approved by an intelligent and honest man of that class acting in respect of his interest; and
- the arrangement is not one that would more properly be sanctioned under some other provision of the Companies Act.

The Companies Act also contains a statutory power of compulsory acquisition which may facilitate the "squeeze out" of a dissenting minority shareholder upon a tender offer. When a tender offer is made and accepted by holders of 90.0% of the shares affected within four months, the offeror may, within a two-month period commencing on the expiration of such four-month period, require the holders of the remaining shares to transfer such shares to the offeror on the terms of the offer. An objection can be made to the Grand Court of the Cayman Islands but this is unlikely to succeed in the case of an offer which has been so approved unless there is evidence of fraud, bad faith or collusion.

If an arrangement and reconstruction is thus approved, or if a tender offer is made and accepted, a dissenting shareholder would have no rights comparable to appraisal rights, which would otherwise ordinarily be available to dissenting shareholders of Delaware corporations, providing rights to receive payment in cash for the judicially determined value of the shares.

Shareholders' Suits

In principle, we will normally be the proper plaintiff to sue for a wrong done to us as a company, and as a general rule a derivative action may not be brought by a minority shareholder. However, based on English authorities, which would in all likelihood be of persuasive authority in the Cayman Islands, the Cayman Islands court can be expected to follow and apply the common law principles (namely the rule in *Foss v. Harbottle* and the exceptions thereto) which permit a minority shareholder to commence a class action against or derivative actions in the name of the company to challenge actions where:

- a company acts or proposes to act illegally or ultra vires;
- the act complained of, although not ultra vires, could only be effected duly if authorized by more than a simple majority vote that has not been obtained; and
- those who control the company are perpetrating a "fraud on the minority."

Indemnification of Directors and Executive Officers and Limitation of Liability

Cayman Islands law does not limit the extent to which a company's memorandum and articles of association may provide for indemnification of officers and directors, except to the extent any such provision may be held by the Cayman Islands courts to be contrary to public policy, such as to provide indemnification against civil fraud or the consequences of committing a crime. Our eighth amended and restated memorandum and articles of association provide that that we shall indemnify our officers and directors and any trustee against all actions, proceedings, costs, charges, losses, damages and expenses that they or any of them shall or may incur or sustain by reason of any act done or omitted in or about the execution of their duty in their respective offices or trusts, except such (if any) as they shall incur or

sustain by or through their own fraud or dishonesty, and no such director or officer or trustee shall be answerable for the acts, receipts, neglects or defaults of any other director or officer or trustee or for joining in any receipt for the sake of conformity or for the solvency or honesty of any banker or other persons with whom any monies or effects belonging to us may be lodged or deposited for safe custody or for any insufficiency of any security upon which any of our monies may be invested or for any other loss or damage due to any such cause as aforesaid or which may happen in or about the execution of his or her office or trust unless the same shall happen through the fraud or dishonesty of such director or officer or trustee. This standard of conduct is generally the same as permitted under the Delaware General Corporation Law for a Delaware corporation.

In addition, we have entered into indemnification agreements with our directors and executive officers that provide such persons with additional indemnification beyond that provided in our eighth amended and restated memorandum and articles of association.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers or persons controlling us under the foregoing provisions, we have been informed that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Directors' Fiduciary Duties

Under Delaware corporate law, a director of a Delaware corporation has a fiduciary duty to the corporation and its shareholders. This duty has two components: the duty of care and the duty of loyalty. The duty of care requires that a director act in good faith, with the care that an ordinarily prudent person would exercise under similar circumstances. Under this duty, a director must inform himself of, and disclose to shareholders, all material information reasonably available regarding a significant transaction. The duty of loyalty requires that a director acts in a manner he reasonably believes to be in the best interests of the corporation. He must not use his corporate position for personal gain or advantage. This duty prohibits self-dealing by a director and mandates that the best interest of the corporation and its shareholders take precedence over any interest possessed by a director, officer or controlling shareholder and not shared by the shareholders generally. In general, actions of a director are presumed to have been made on an informed basis, in good faith and in the honest belief that the action taken was in the best interests of the corporation. However, this presumption may be rebutted by evidence of a breach of one of the fiduciary duties. Should such evidence be presented concerning a transaction by a director, the director must prove the procedural fairness of the transaction, and that the transaction was of fair value to the corporation.

As a matter of Cayman Islands law, a director of a Cayman Islands company is in the position of a fiduciary with respect to the company and therefore it is considered that he owes the following duties to the company—a duty to act bona fide in the best interests of the company, a duty not to make a profit based on his position as director (unless the company permits him to do so), a duty not to put himself in a position where the interests of the company conflict with his personal interest or his duty to a third party, and a duty to exercise powers for the purpose for which such powers were intended. A director of a Cayman Islands company owes to the company a duty to act with skill and care. It was previously considered that a director need not exhibit in the performance of his duties a greater degree of skill than may reasonably be expected from a person of his knowledge and experience. However, English and Commonwealth courts have moved towards an objective standard with regard to the required skill and care and these authorities are likely to be followed in the Cayman Islands.

Shareholder Action by Written Consent

Under the Delaware General Corporation Law, a corporation may eliminate the right of shareholders to act by written consent by amendment to its certificate of incorporation. The Companies Act and our eighth amended and restated articles of association provide that our shareholders may approve corporate matters by way of a unanimous written resolution signed by or on behalf of each shareholder who would have been entitled to vote on such matter at a general meeting without a meeting being held.

Shareholder Proposals

Under the Delaware General Corporation Law, a shareholder has the right to put any proposal before the annual meeting of shareholders, provided it complies with the notice provisions in the governing documents. A special meeting may be called by the board of directors or any other person authorized to do so in the governing documents, but shareholders may be precluded from calling special meetings.

The Companies Act provide shareholders with only limited rights to requisition a general meeting, and does not provide shareholders with any right to put any proposal before a general meeting. However, these rights may be provided in a company's articles of association. Our eighth amended and restated articles of association allow our shareholders holding in aggregate not less than one-third of all votes attaching to the issued and outstanding shares of our company entitled to vote at general meetings to requisition an extraordinary general meeting of our shareholders, in which case our board is obliged to convene an extraordinary general meeting and to put the resolutions so requisitioned to a vote at such meeting. Other than this right to requisition a shareholders' meeting, our post-offering amended and restated articles of association do not provide our shareholders with any other right to put proposals before annual general meetings or extraordinary general meetings not called by such shareholders. As an exempted Cayman Islands company, we are not obliged by law to call shareholders' annual general meetings.

Cumulative Voting

Under the Delaware General Corporation Law, cumulative voting for elections of directors is not permitted unless the corporation's certificate of incorporation specifically provides for it. Cumulative voting potentially facilitates the representation of minority shareholders on a board of directors since it permits the minority shareholder to cast all the votes to which the shareholder is entitled on a single director, which increases the shareholder's voting power with respect to electing such director. There are no prohibitions in relation to cumulative voting under the laws of the Cayman Islands but our eighth amended and restated articles of association do not provide for cumulative voting. As a result, our shareholders are not afforded any less protections or rights on this issue than shareholders of a Delaware corporation.

Removal of Directors

Under the Delaware General Corporation Law, a director of a corporation with a classified board may be removed only for cause with the approval of a majority of the outstanding shares entitled to vote, unless the certificate of incorporation provides otherwise. Under our eighth amended and restated articles of association, directors may be removed with or without cause, by an ordinary resolution of our shareholders. A director shall hold office until the expiration of his or her term or his or her successor shall have been elected and qualified, or until his or her office is otherwise vacated. A director may be removed from office by ordinary resolution of shareholders or the affirmative vote of a simple majority of the other directors present and voting at a board meeting, provided that in the event that the chairman is to be removed by the affirmative vote of a simple majority of the other directors

present and voting at a board meeting, such affirmative vote shall include the vote of at least one Management Director (as defined under the eighth amended and restated memorandum and articles of association). In addition, a director's office shall be vacated if the director (i) becomes bankrupt or makes any arrangement or composition with his creditors; (ii) is found to be or becomes of unsound mind or dies; (iii) resigns his office by notice in writing to the company; (iv) without special leave of absence from our board of directors, is absent from three consecutive meetings of the board and the board resolves that his office be vacated; (v) is prohibited by law from being a director; or (vi) is removed from office pursuant to any other provisions of our eighth amended and restated memorandum and articles of association.

Transactions with Interested Shareholders

The Delaware General Corporation Law contains a business combination statute applicable to Delaware corporations whereby, unless the corporation has specifically elected not to be governed by such statute by amendment to its certificate of incorporation, it is prohibited from engaging in certain business combinations with an "interested shareholder" for three years following the date that such person becomes an interested shareholder. An interested shareholder generally is a person or a group who or which owns or owned 15% or more of the target's outstanding voting share within the past three years. This has the effect of limiting the ability of a potential acquirer to make a two-tiered bid for the target in which all shareholders would not be treated equally. The statute does not apply if, among other things, prior to the date on which such shareholder becomes an interested shareholder, the board of directors approves either the business combination or the transaction which resulted in the person becoming an interested shareholder. This encourages any potential acquirer of a Delaware corporation to negotiate the terms of any acquisition transaction with the target's board of directors.

Cayman Islands law has no comparable statute. As a result, we cannot avail ourselves of the types of protections afforded by the Delaware business combination statute. However, although Cayman Islands law does not regulate transactions between a company and its significant shareholders, the directors of the Company are required to comply with fiduciary duties which they owe to the Company under Cayman Islands laws, including the duty to ensure that, in their opinion, any such transactions must be entered into bona fide in the best interests of the company, and are entered into for a proper corporate purpose and not with the effect of constituting a fraud on the minority shareholders.

Dissolution; Winding up

Under the Delaware General Corporation Law, unless the board of directors approves the proposal to dissolve, dissolution must be approved by shareholders holding 100% of the total voting power of the corporation. Only if the dissolution is initiated by the board of directors may it be approved by a simple majority of the corporation's outstanding shares. Delaware law allows a Delaware corporation to include in its certificate of incorporation a supermajority voting requirement in connection with dissolutions initiated by the board.

Under Cayman Islands law, a company may be wound up by either an order of the courts of the Cayman Islands or by a special resolution of its members or, if the company is unable to pay its debts as they fall due, by an ordinary resolution of its members. The court has authority to order winding up in a number of specified circumstances including where it is, in the opinion of the court, just and equitable to do so. Under the Companies Act and our eighth amended and restated articles of association, our company may be dissolved, liquidated or wound up by a special resolution of our shareholders.

Variation of Rights of Shares

Under the Delaware General Corporation Law, a corporation may vary the rights of a class of shares with the approval of a majority of the outstanding shares of such class, unless the certificate of incorporation provides otherwise. Under Cayman Islands law and our eighth amended and restated articles of association, if our share capital is divided into more than one class of shares, we may vary the rights attached to any class with the written consent of the holders of a majority of the issued shares of that class or with the sanction of a special resolution passed at a general meeting of the holders of the shares of that class.

Amendment of Governing Documents

Under the Delaware General Corporation Law, a corporation's governing documents may be amended with the approval of a majority of the outstanding shares entitled to vote, unless the certificate of incorporation provides otherwise. Under the Companies Act and our eighth amended and restated memorandum and articles of association, our memorandum and articles of association may only be amended by a special resolution of our shareholders.

Rights of Non-resident or Foreign Shareholders

There are no limitations imposed by our Memorandum and Articles of Association on the rights of nonresident or foreign shareholders to hold or exercise voting rights on our shares. In addition, there are no provisions in our Memorandum and Articles of Association governing the ownership threshold above which shareholder ownership must be disclosed.

Changes in Capital (Item 10.B.10 of Form 20-F)

Subject to the provisions of the Companies Act and our eighth memorandum and articles of association, our shareholders may from time to time by ordinary resolutions:

- increase the share capital by such sum, to be divided into shares of such classes and amount, as the resolution shall prescribe and with such rights, priorities and privileges annexed thereto, as our shareholders in general meeting may determine;

- consolidate and divide all or any of our share capital into shares of larger amount than our existing shares;

- divide our shares into several classes and, without prejudice to any special rights previously conferred on the holders of existing Shares, attach thereto respectively any preferential, deferred, qualified or special rights, privileges, conditions or such restrictions which in the absence of any such determination by our general meeting, as the directors may determine; provided always that, for the avoidance of doubt, where a class of shares has been authorized by our company, no resolution of our shareholders in general meeting is required for the issuance of shares of that class and the directors may issue shares of that class and determine such rights, privileges, conditions or restrictions attaching thereto as aforesaid;

- subdivide our shares, or any of them, into shares of smaller amount than is fixed by the Memorandum and Articles of Association or into shares without par value (subject, nevertheless, to the applicable laws); and

- cancel any shares that at the date of the passing of the resolution have not been taken or agreed to be taken by any person and diminish the amount of its share capital by the amount of the shares so cancelled or, in the case of shares, without par value, diminish the number of

shares into which its capital is divided.

Debt Securities (Item 12.A of Form 20-F)

Not applicable.

Warrants and Rights (Item 12.B of Form 20-F)

Not applicable.

Other Securities (Item 12.C of Form 20-F)

Not applicable.

Description of American Depositary Shares (Items 12.D.1 and 12.D.2 of Form 20-F)

The Bank of New York Mellon, as depositary, registers and delivers American Depositary Shares, also referred to as ADSs. Each ADS represents one Class A ordinary share (or a right to receive one Class A ordinary share) deposited with The Hongkong and Shanghai Banking Corporation Limited, as custodian for the depositary in Hong Kong. Each ADS also represents any other securities, cash or other property that may be held by the depositary. The deposited shares together with any other securities, cash or other property held by the depositary are referred to as the deposited securities. The depositary's office at which the ADSs will be administered and its principal executive office are located at 240 Greenwich Street, New York, New York 10286.

You may hold ADSs either (A) directly (i) by having an American Depositary Receipt, also referred to as an ADR, which is a certificate evidencing a specific number of ADSs, registered in your name, or (ii) by having uncertificated ADSs registered in your name, or (B) indirectly by holding a security entitlement in ADSs through your broker or other financial institution that is a direct or indirect participant in The Depository Trust Company, also called DTC. If you hold ADSs directly, you are a registered ADS holder, also referred to as an ADS holder. This description assumes you are an ADS holder. If you hold the ADSs indirectly, you must rely on the procedures of your broker or other financial institution to assert the rights of ADS holders described in this section. You should consult with your broker or financial institution to find out what those procedures are.

Registered holders of uncertificated ADSs will receive statements from the depositary confirming their holdings.

As an ADS holder, we will not treat you as one of our shareholders and you will not have shareholder rights. Cayman Islands law governs shareholder rights. The depositary will be the holder of the shares underlying your ADSs. As a registered holder of ADSs, you will have ADS holder rights. A deposit agreement among us, the depositary, ADS holders and all other persons indirectly or beneficially holding ADSs sets out ADS holder rights as well as the rights and obligations of the depositary. New York law governs the deposit agreement and the ADSs.

The following is a summary of the material provisions of the deposit agreement. For more complete information, you should read the entire deposit agreement and the form of ADR, which contains the terms of your ADSs. The deposit agreement has been filed with the SEC as an exhibit to a Registration Statement on Form F-6 (File No. 333-254092) for our company on March 10, 2021. The form of ADR has been initially filed with the SEC as an exhibit to our Registration Statement on Form

F-1 (File No. 333-253575), as amended, on February 26, 2021.

Dividends and Other Distributions

How will you receive dividends and other distributions on the shares?

The depositary has agreed to pay or distribute to ADS holders the cash dividends or other distributions it or the custodian receives on shares or other deposited securities, upon payment or deduction of its fees and expenses. You will receive these distributions in proportion to the number of shares your ADSs represent.

Cash

The depositary will convert any cash dividend or other cash distribution we pay on the shares into U.S. dollars, if it can do so on a reasonable basis and can transfer the U.S. dollars to the United States. If that is not possible or if any government approval is needed and cannot be obtained, the deposit agreement allows the depositary to distribute the foreign currency only to those ADS holders to whom it is possible to do so. It will hold the foreign currency it cannot convert for the account of the ADS holders who have not been paid. It will not invest the foreign currency and it will not be liable for any interest.

Before making a distribution, any withholding taxes, or other governmental charges that must be paid will be deducted. See "Taxation." The depositary will distribute only whole U.S. dollars and cents and will round fractional cents to the nearest whole cent. I*f the exchange rates fluctuate during a time when the depositary cannot convert the foreign currency, you may lose some of the value of the distribution.*

Shares

The depositary may distribute additional ADSs representing any shares we distribute as a dividend or free distribution. The depositary will only distribute whole ADSs. It will sell shares which would require it to deliver a fraction of an ADS (or ADSs representing those shares) and distribute the net proceeds in the same way as it does with cash. If the depositary does not distribute additional ADSs, the outstanding ADSs will also represent the new shares. The depositary may sell a portion of the distributed shares (or ADSs representing those shares) sufficient to pay its fees and expenses in connection with that distribution.

Rights to purchase additional shares

If we offer holders of our securities any rights to subscribe for additional shares or any other rights, the depositary may (i) exercise those rights on behalf of ADS holders, (ii) distribute those rights to ADS holders or (iii) sell those rights and distribute the net proceeds to ADS holders, in each case after deduction or upon payment of its fees and expenses. To the extent the depositary does not do any of those things, it will allow the rights to lapse. *In that case, you will receive no value for them.* The depositary will exercise or distribute rights only if we ask it to and provide satisfactory assurances to the depositary that it is legal to do so. If the depositary will exercise rights, it will purchase the securities to which the rights relate and distribute those securities or, in the case of shares, new ADSs representing the new shares, to subscribing ADS holders, but only if ADS holders have paid the exercise price to the depositary. U.S. securities laws may restrict the ability of the depositary to distribute rights or ADSs or other securities issued on exercise of rights to all or certain ADS holders, and the securities distributed may be subject to restrictions on transfer.

Other Distributions

The depositary will send to ADS holders anything else we distribute on deposited securities by any means it thinks is legal, fair and practical. If it cannot make the distribution in that way, the depositary has a choice. It may decide to sell what we distributed and distribute the net proceeds, in the same way as it does with cash. Or, it may decide to hold what we distributed, in which case ADSs will also represent the newly distributed property. However, the depositary is not required to distribute any securities (other than ADSs) to ADS holders unless it receives satisfactory evidence from us that it is legal to make that distribution. The depositary may sell a portion of the distributed securities or property sufficient to pay its fees and expenses in connection with that distribution. U.S. securities laws may restrict the ability of the depositary to distribute securities to all or certain ADS holders, and the securities distributed may be subject to restrictions on transfer.

The depositary is not responsible if it decides that it is unlawful or impractical to make a distribution available to any ADS holders. We have no obligation to register ADSs, shares, rights or other securities under the Securities Act. We also have no obligation to take any other action to permit the distribution of ADSs, shares, rights or anything else to ADS holders. *This means that you may not receive the distributions we make on our shares or any value for them if it is illegal or impractical for us to make them available to you.*

Deposit, Withdrawal and Cancellation

How are ADSs issued?

The depositary will deliver ADSs if you or your broker deposits shares or evidence of rights to receive shares with the custodian. Upon payment of its fees and expenses and of any taxes or charges, such as stamp taxes or stock transfer taxes or fees, the depositary will register the appropriate number of ADSs in the names you request and will deliver the ADSs to or upon the order of the person or persons that made the deposit.

How can ADS holders withdraw the deposited securities?

You may surrender your ADSs to the depositary for the purpose of withdrawal. Upon payment of its fees and expenses and of any taxes or charges, such as stamp taxes or stock transfer taxes or fees, the depositary will deliver the shares and any other deposited securities underlying the ADSs to the ADS holder or a person the ADS holder designates at the office of the custodian. Or, at your request, risk and expense, the depositary will deliver the deposited securities at its office, if feasible. However, the depositary is not required to accept surrender of ADSs to the extent it would require delivery of a fraction of a deposited share or other security. The depositary may charge you a fee and its expenses for instructing the custodian regarding delivery of deposited securities.

How do ADS holders interchange between certificated ADSs and uncertificated ADSs?

You may surrender your ADR to the depositary for the purpose of exchanging your ADR for uncertificated ADSs. The depositary will cancel that ADR and will send to the ADS holder a statement confirming that the ADS holder is the registered holder of uncertificated ADSs. Upon receipt by the depositary of a proper instruction from a registered holder of uncertificated ADSs requesting the exchange of uncertificated ADSs for certificated ADSs, the depositary will execute and deliver to the ADS holder an ADR evidencing those ADSs.

Voting Rights

How do you vote?

ADS holders may instruct the depositary how to vote the number of deposited shares their ADSs represent. If we request the depositary to solicit your voting instructions (and we are not required to do so), the depositary will notify you of a shareholders' meeting and send or make voting materials available to you. Those materials will describe the matters to be voted on and explain how ADS holders may instruct the depositary how to vote. For instructions to be valid, they must reach the depositary by a date set by the depositary. The depositary will try, as far as practical, subject to the laws of the Cayman Islands and the provisions of our articles of association or similar documents, to vote or to have its agents vote the shares or other deposited securities as instructed by ADS holders. If we do not request the depositary to solicit your voting instructions, you can still send voting instructions, and, in that case, the depositary may try to vote as you instruct, but it is not required to do so.

Except by instructing the depositary as described above, you won't be able to exercise voting rights unless you surrender your ADSs and withdraw the shares. However, you may not know about the meeting enough in advance to withdraw the shares. In any event, the depositary will not exercise any discretion in voting deposited securities and it will only vote or attempt to vote as instructed.

We cannot assure you that you will receive the voting materials in time to ensure that you can instruct the depositary to vote the shares represented by your ADSs. In addition, the depositary and its agents are not responsible for failing to carry out voting instructions or for the manner of carrying out voting instructions. *This means that you may not be able to exercise voting rights and there may be nothing you can do if your shares are not voted as you requested.*

In order to give you a reasonable opportunity to instruct the depositary as to the exercise of voting rights relating to Deposited Securities, if we request the depositary to act, we agree to give the depositary notice of any such meeting and details concerning the matters to be voted upon at least 45 days in advance of the meeting date.

Tender and Exchange Offers; Redemption, Replacement or Cancellation of Deposited Securities

The depositary will not tender deposited securities in any voluntary tender or exchange offer unless instructed to do so by an ADS holder surrendering ADSs and subject to any conditions or procedures the depositary may establish.

If deposited securities are redeemed for cash in a transaction that is mandatory for the depositary as a holder of deposited securities, the depositary will call for surrender of a corresponding number of ADSs and distribute the net redemption money to the holders of called ADSs upon surrender of those ADSs.

If there is any change in the deposited securities such as a sub-division, combination or other reclassification, or any merger, consolidation, recapitalization or reorganization affecting the issuer of deposited securities in which the depositary receives new securities in exchange for or in lieu of the old deposited securities, the depositary will hold those replacement securities as deposited securities under the deposit agreement. However, if the depositary decides it would not be lawful and practical to hold the replacement securities because those securities could not be distributed to ADS holders or for any other reason, the depositary may instead sell the replacement securities and distribute the net proceeds upon surrender of the ADSs.

If there is a replacement of the deposited securities and the depositary will continue to hold the replacement securities, the depositary may distribute new ADSs representing the new deposited

securities or ask you to surrender your outstanding ADSs in exchange for new ADSs identifying the new deposited securities.

If there are no deposited securities underlying ADSs, including if the deposited securities are cancelled, or if the deposited securities underlying ADSs have become apparently worthless, the depositary may call for surrender of those ADSs or cancel those ADSs upon notice to the ADS holders.

Amendment and Termination

How may the deposit agreement be amended?

We may agree with the depositary to amend the deposit agreement and the ADRs without your consent for any reason. If an amendment adds or increases fees or charges, except for taxes and other governmental charges or expenses of the depositary for registration fees, facsimile costs, delivery charges or similar items, or prejudices a substantial right of ADS holders, it will not become effective for outstanding ADSs until 30 days after the depositary notifies ADS holders of the amendment. *At the time an amendment becomes effective, you are considered, by continuing to hold your ADSs, to agree to the amendment and to be bound by the ADRs and the deposit agreement as amended.*

How may the deposit agreement be terminated?

The depositary will initiate termination of the deposit agreement if we instruct it to do so. The depositary may initiate termination of the deposit agreement if

- 60 days have passed since the depositary told us it wants to resign but a successor depositary has not been appointed and accepted its appointment
- we delist the ADSs from an exchange in the United States on which they were listed and do not list the ADSs on another exchange in the United States or make arrangements for trading of ADSs on the U.S. over-the-counter market;
- we delist our shares from an exchange outside the United States on which they were listed and do not list the shares on another exchange outside the United States;
- the depositary has reason to believe the ADSs have become, or will become, ineligible for registration on Form F-6 under the Securities Act of 1933;
- we appear to be insolvent or enter insolvency proceedings;
- all or substantially all the value of the deposited securities has been distributed either in cash or in the form of securities;
- there are no deposited securities underlying the ADSs or the underlying deposited securities have become apparently worthless; or
- there has been a replacement of deposited securities.

If the deposit agreement will terminate, the depositary will notify ADS holders at least 90 days before the termination date. At any time after the termination date, the depositary may sell the deposited securities. After that, the depositary will hold the money it received on the sale, as well as

any other cash it is holding under the deposit agreement, unsegregated and without liability for interest, for the pro rata benefit of the ADS holders that have not surrendered their ADSs. Normally, the depositary will sell as soon as practicable after the termination date.

After the termination date and before the depositary sells, ADS holders can still surrender their ADSs and receive delivery of deposited securities, except that the depositary may refuse to accept a surrender for the purpose of withdrawing deposited securities or reverse previously accepted surrenders of that kind that have not settled if it would interfere with the selling process. The depositary may refuse to accept a surrender for the purpose of withdrawing sale proceeds until all the deposited securities have been sold. The depositary will continue to collect distributions on deposited securities, but, after the termination date, the depositary is not required to register any transfer of ADSs or distribute any dividends or other distributions on deposited securities to the ADSs holder (until they surrender their ADSs) or give any notices or perform any other duties under the deposit agreement except as described in this paragraph.

Limitations on Obligations and Liability

Limits on our Obligations and the Obligations of the Depositary; Limits on Liability to Holders of ADSs

The deposit agreement expressly limits our obligations and the obligations of the depositary. It also limits our liability and the liability of the depositary. We and the depositary:

- are only obligated to take the actions specifically set forth in the deposit agreement without negligence or bad faith, and the depositary will not be a fiduciary or have any fiduciary duty to holders of ADSs;
- are not liable if we are or it is prevented or delayed by law or by events or circumstances beyond our or its ability to prevent or counteract with reasonable care or effort from performing our or its obligations under the deposit agreement;
- are not liable if we or it exercises discretion permitted under the deposit agreement;
- are not liable for the inability of any holder of ADSs to benefit from any distribution on deposited securities that is not made available to holders of ADSs under the terms of the deposit agreement, or for any special, consequential or punitive damages for any breach of the terms of the deposit agreement;
- have no obligation to become involved in a lawsuit or other proceeding related to the ADSs or the deposit agreement on your behalf or on behalf of any other person;
- may rely upon any documents we believe or it believes in good faith to be genuine and to have been signed or presented by the proper person;
- are not liable for the acts or omissions of any securities depository, clearing agency or settlement system; and
- the depositary has no duty to make any determination or provide any information as to our tax status, or any liability for any tax consequences that may be incurred by ADS holders as a result of owning or holding ADSs or be liable for the inability or failure of an ADS holder to obtain the benefit of a foreign tax credit, reduced rate of withholding or refund of amounts withheld in respect of tax or any other tax benefit.

In the deposit agreement, we and the depositary agree to indemnify each other under certain circumstances.

Requirements for Depositary Actions

Before the depositary will deliver or register a transfer of ADSs, make a distribution on ADSs, or permit withdrawal of shares, the depositary may require:

- payment of stock transfer or other taxes or other governmental charges and transfer or registration fees charged by third parties for the transfer of any shares or other deposited securities;
- satisfactory proof of the identity and genuineness of any signature or other information it deems necessary; and
- compliance with regulations it may establish, from time to time, consistent with the deposit agreement, including presentation of transfer documents.

The depositary may refuse to deliver ADSs or register transfers of ADSs when the transfer books of the depositary or our transfer books are closed or at any time if the depositary or we think it advisable to do so.

Your Right to Receive the Shares Underlying your ADSs

ADS holders have the right to cancel their ADSs and withdraw the underlying shares at any time except:

- when temporary delays arise because: (i) the depositary has closed its transfer books or we have closed our transfer books; (ii) the transfer of shares is blocked to permit voting at a shareholders' meeting; or (iii) we are paying a dividend on our shares;
- when you owe money to pay fees, taxes and similar charges; or
- when it is necessary to prohibit withdrawals in order to comply with any laws or governmental regulations that apply to ADSs or to the withdrawal of shares or other deposited securities.

This right of withdrawal may not be limited by any other provision of the deposit agreement.

Direct Registration System

In the deposit agreement, all parties to the deposit agreement acknowledge that the Direct Registration System, also referred to as DRS, and Profile Modification System, also referred to as Profile, will apply to the ADSs. DRS is a system administered by DTC that facilitates interchange between registered holding of uncertificated ADSs and holding of security entitlements in ADSs through DTC and a DTC participant. Profile is a feature of DRS that allows a DTC participant, claiming to act on behalf of a registered holder of uncertificated ADSs, to direct the depositary to register a transfer of those ADSs to DTC or its nominee and to deliver those ADSs to the DTC account of that DTC participant without receipt by the depositary of prior authorization from the ADS holder to register that transfer.

In connection with and in accordance with the arrangements and procedures relating to DRS/Profile, the parties to the deposit agreement understand that the depositary will not determine whether the DTC participant that is claiming to be acting on behalf of an ADS holder in requesting registration of transfer and delivery as described in the paragraph above has the actual authority to act on behalf of the ADS holder (notwithstanding any requirements under the Uniform Commercial Code). In the deposit agreement, the parties agree that the depositary's reliance on and compliance with instructions received by the depositary through the DRS/Profile system and in accordance with the deposit agreement will not constitute negligence or bad faith on the part of the depositary.

Shareholder communications; inspection of register of holders of ADSs

The depositary will make available for your inspection at its office all communications that it receives from us as a holder of deposited securities that we make generally available to holders of deposited securities. The depositary will send you copies of those communications or otherwise make those communications available to you if we ask it to. You have a right to inspect the register of holders of ADSs, but not for the purpose of contacting those holders about a matter unrelated to our business or the ADSs.

Jury Trial Waiver

The deposit agreement provides that, to the extent permitted by law, ADS holders waive the right to a jury trial of any claim they may have against us or the depositary arising out of or relating to our shares, the ADSs or the deposit agreement, including any claim under the U.S. federal securities laws. If we or the depositary opposed a jury trial demand based on the waiver, the court would determine whether the waiver was enforceable in the facts and circumstances of that case in accordance with applicable case law. You will not, by agreeing to the terms of the deposit agreement, be deemed to have waived our or the depositary's compliance with U.S. federal securities laws or the rules and regulations promulgated thereunder.

Exhibit 4.5

Amended and Restated Equity Interest Pledge Agreement

This Amended and Restated Equity Interest Pledge Agreement (this "Agreement") has been executed by and among the following parties on January 19, 2022 in Hangzhou, the People's Republic of China ("China" or the "PRC"):

Party A: Hangzhou Tuya Information Technology Co., Ltd. (formerly Hangzhou Aixiangji Technology Co., Ltd., hereinafter "Pledgee"), a wholly foreign owned enterprise, organized and existing under the laws of the PRC, with its address at Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou;

Party B: Ruixin ZHOU (hereinafter "Pledgor"), a Chinese citizen with Chinese Identification No.: *****; and

Party C: Hangzhou Tuya Technology Co., Ltd., a limited liability company organized and existing under the laws of the PRC, with its address at Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou.

In this Agreement, each of Pledgee, Pledgor and Party C shall be referred to as a "Party" respectively, and they shall be collectively referred to as the "Parties".

Whereas:

1. The Parties are parties who entered into the Equity Interest Pledge Agreement dated December 23, 2014 (the "Original Agreement"). The Original Agreement provided that any amendments, modifications and supplements to the Original Agreement shall

require the execution of a written agreement by the Parties. The Parties intend to enter into this Agreement in order to amend, restate and replace in its entirety the rights and obligations under in the Original Agreement with the rights and obligations provided in this Agreement. The registration of equity pledge under the Original Agreement which has been completed and remains valid is not subject to the amendment and restatement and continue to be valid. No re-registration is required for the Parties.

2. Pledgor is a citizen of China who as of the date hereof holds 13.10% of equity interests of Party C. Party C is a limited liability company registered in Hangzhou, Zhejiang, China. Party C acknowledges the respective rights and obligations of Pledgor and Pledgee under this Agreement, and intends to provide any necessary assistance in registering the Pledge;

3. Pledgee is a wholly foreign-owned enterprise registered in China. Pledgee and Party C which is partially owned by Pledgor have executed an Exclusive Business Cooperation Agreement (as defined below); Party C, Pledgee and Pledgor have executed an Exclusive Option Agreement (as defined below); Pledgor has executed a Power of Attorney (as defined below) in favor of Pledgee.

4. To ensure that Party C and Pledgor fully perform their obligations under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and the Power of Attorney, Pledgor hereby pledges to the Pledgee all of the equity interest that Pledgor holds in Party C as security for Party C's and Pledgor's obligations under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and the Power of Attorney.

5. To perform the provisions of the Transaction Documents (as defined below), the Parties have mutually agreed to execute this Agreement upon the following terms.

1. Definitions

Unless otherwise provided herein, the terms below shall have the following meanings:

1.1 Pledge: shall refer to the security interest granted by Pledgor to Pledgee pursuant to Section 2 of this Agreement, i.e., the right of Pledgee to be paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest.

1.2 Equity Interest: shall refer to 13.10% equity interests in Party C currently held by Pledgor, and all of the equity interest hereafter acquired by Pledgor in Party C.

1.3 Term of Pledge: shall refer to the term set forth in Section 3 of this Agreement.

1.4 Transaction Documents: shall refer to the Exclusive Business Cooperation Agreement executed by and between Party C and Pledgee on December 23, 2014 and any modifications, amendments and/or restatements thereto (the "Exclusive Business Cooperation Agreement"), the Exclusive Option Agreement executed by and among Pledgor, Party C, and Pledgee on December 23, 2014 and any modifications, amendments and/or restatements thereto (the "Exclusive Option Agreement"), Power of Attorney executed on December 23, 2014 by Pledgor and any modifications, amendments and/or restatements thereto (the "Power of Attorney").

1.5 Contract Obligations: shall refer to all the obligations of Pledgor under the Exclusive Option Agreement, the Power of Attorney and this Agreement; all the obligations of Party C under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and this Agreement.

1.6 Secured Indebtedness: shall refer to all the direct, indirect and derivative losses and losses of anticipated profits, suffered by Pledgee, incurred as a result of any Event of Default. The amount of such loss shall be calculated in accordance with the reasonable business plan and profit forecast of Pledgee, the consulting and service fees payable to Pledgee under the Exclusive Business Cooperation Agreement, all expenses occurred in connection with enforcement by Pledgee of Pledgor's and/or Party C's Contract Obligations and etc.

1.7 Event of Default: shall refer to any of the circumstances set forth in Section 7 of this Agreement.

1.8 Notice of Default: shall refer to the notice issued by Pledgee in accordance with this Agreement declaring an Event of Default.

2. Pledge

2.1 Pledgor agrees to pledge all the Equity Interest as security for performance of the Contract Obligations and payment of the Secured Indebtedness under this Agreement. Party C hereby assents that Pledgor pledges the Equity Interest to the Pledgee pursuant to this Agreement.

2.2 During the term of the Pledge, Pledgee is entitled to receive dividends distributed on the Equity Interest. Pledgor may receive dividends distributed on the Equity Interest only with prior written consent of Pledgee. Dividends received by Pledgor on Equity Interest after deduction of individual income tax paid by Pledgor shall be, as required by Pledgee, (1) deposited into an account designated and supervised by Pledgee and used to secure the Contract Obligations and pay the Secured Indebtedness prior and in preference to make any other payment; or (2) unconditionally donated to Pledgee or any other person designated by Pledgee to the extent permitted under applicable PRC laws.

2.3 Pledgor may subscribe for capital increase in Party C only with prior written consent of Pledgee. Any equity interest obtained by Pledgor as a result of Pledgor's subscription of the increased registered capital of the Company shall also be deemed as Equity Interest.

2.4 In the event that Party C is required by PRC law or upon the written consent by Party A to be liquidated or dissolved, any interest distributed to Pledgor upon Party C's dissolution or liquidation shall, upon the request of the Pledgee, be (1) deposited into an account designate and supervised by Pledgee and used to secure the Contract Obligations and pay the Secured Indebtedness prior and in preference to make any other payment; or (2) unconditionally donated to Pledgee or any other person designated by Pledgee to the extent permitted under applicable PRC laws.

3. Term of Pledge

3.1 The Pledge shall become effective on such date when the pledge of the Equity Interest contemplated herein is registered with relevant administration for industry and commerce (the "AIC"). The Pledge shall remain effective until all Contract Obligations have been fully performed and all Secured Indebtedness have been fully paid. Pledgor and Party C shall (1) register the Pledge in the shareholders' register of Party C within 3 business days following the execution of this Agreement, and (2) submit an application to the AIC for the registration of the Pledge of the Equity Interest contemplated herein within 30 business days following the execution of this Agreement. The parties covenant that for the purpose of registration of the Pledge, the parties hereto and all other shareholders of Party C shall submit to the AIC this Agreement or an equity interest pledge

contract in the form required by the AIC at the location of Party C which shall truly reflect the information of the Pledge hereunder (the "AIC Pledge Contract"). For matters not specified in the AIC Pledge Contract or any discrepancies with this Agreement, the parties shall be bound by the provisions of this Agreement. Pledgor and Party C shall submit all necessary documents and complete all necessary procedures, as required by the PRC laws and regulations and the relevant AIC, to ensure that the Pledge of the Equity Interest shall be registered with the AIC as soon as possible after submission for filing.

3.2 During the Term of Pledge, in the event Pledgor and/or Party C fails to perform the Contract Obligations or pay Secured Indebtedness, Pledgee shall have the right, but not the obligation, to exercise the Pledge in accordance with the provisions of this Agreement.

4. Custody of Records for Equity Interest subject to Pledge

4.1 During the Term of Pledge set forth in this Agreement, Pledgor shall deliver to Pledgee's custody the shareholders' register containing the Pledge within one week from the execution of this Agreement. Pledgee shall have custody of such document during the entire Term of Pledge set forth in this Agreement.

5. Representations and Warranties of Pledgor and Party C

As of the execution date of this Agreement, Pledgor and Party C hereby jointly and severally represent and warrant to Pledgee that:

5.1 Pledgor is the sole legal and beneficial owner of the Equity Interest.

5.2 Pledgee shall have the right to dispose of and transfer the Equity Interest in accordance with the provisions set forth in this Agreement.

5.3 Except for the Pledge, Pledgor has not placed any security interest or other encumbrance on the Equity Interest.

5.4 Pledgor and Party C have obtained any and all approvals and consents from applicable government authorities and third parties (if required) for execution, delivery and performance of this Agreement.

5.5 The execution, delivery and performance of this Agreement will not: (i) violate any relevant PRC laws (except for Section 14.2 of this Agreement); (ii) conflict with Party C's articles of association or other constitutional documents; (iii) result in any breach of or constitute any default under any contract or instrument to which it is a party or by which it is otherwise bound; (iv) result in any violation of any condition for the grant and/or maintenance of any permit or approval granted to any Party; or (v) cause any permit or approval granted to any Party to be suspended, cancelled or attached with additional conditions.

6. Covenants of Pledgor and Party C

6.1 During the term of this Agreement, Pledgor and Party C hereby jointly and severally covenant to the Pledgee:

6.1.1 Pledgor shall not transfer the Equity Interest, place or permit the existence of any security interest or other encumbrance on the Equity Interest or any portion thereof, without the prior written consent of Pledgee, except for the performance of the Transaction Documents;

6.1.2 Pledgor and Party C shall comply with the provisions of all laws and regulations applicable to the pledge of rights, and within five (5) days of

receipt of any notice, order or recommendation issued or prepared by relevant competent authorities regarding the Pledge, shall present the aforementioned notice, order or recommendation to Pledgee, and shall comply with the aforementioned notice, order or recommendation or submit objections and representations with respect to the aforementioned matters upon Pledgee's reasonable request or upon consent of Pledgee;

6.1.3 Pledgor and Party C shall promptly notify Pledgee of any event or notice received by Pledgor that may have an impact on the Equity Interest or any portion thereof, as well as any event or notice received by Pledgor that may have an impact on any guarantees and other obligations of Pledgor arising out of this Agreement.

6.1.4 Party C shall complete the registration procedures for extension of the term of operation within three (3) months prior to the expiration of such term to maintain the validity of this Agreement.

6.2 Pledgor agrees that the rights acquired by Pledgee in accordance with this Agreement with respect to the Pledge shall not be interrupted or harmed by Pledgor or any heirs or representatives of Pledgor or any other persons through any legal proceedings. Any heirs or representatives of the Pledgor shall cooperate with the other Parties to this Agreement to make all necessary arrangements and sign all necessary documents, ensuring the fulfillment of this Agreement will not be harmed or prevented by these heirs or representatives.

6.3 To protect or perfect the security interest granted by this Agreement for the Contract Obligations and Secured Indebtedness, Pledgor hereby undertakes to execute in good faith and to cause other parties who have an interest in the Pledge to execute all certificates, agreements, deeds and/or covenants required by Pledgee. Pledgor also undertakes to perform and to cause other parties who have an interest in the Pledge to perform actions required by Pledgee, to facilitate the exercise by Pledgee of its rights and authority granted thereto by this Agreement, and to enter into all relevant documents regarding ownership of Equity Interest with Pledgee or designee(s) of Pledgee (natural persons/legal persons). Pledgor undertakes to provide Pledgee within a reasonable time with all notices, orders and decisions regarding the Pledge that are required by Pledgee.

6.4 Pledgor hereby undertakes to comply with and perform all guarantees, promises, agreements, representations and conditions under this Agreement. In the event of failure or partial performance of its guarantees, promises, agreements, representations and conditions, Pledgor shall indemnify Pledgee for all losses resulting therefrom.

7. Event of Breach

7.1 The following circumstances shall be deemed Event of Default:

7.1.1 Pledgor's any breach to any representations, warranties or obligations under the Transaction Documents and/or this Agreement;

7.1.2 Party C's any breach to any representations, warranties or obligations under the Transaction Documents and/or this Agreement;

7.1.3 Any or various obligation(s) of Party B or Party C under the Transaction Documents and/or this Agreement is/are treated as illegal or void transaction.

7.2 Upon notice or discovery of the occurrence of any circumstances or event that may lead to the aforementioned circumstances described in Section 7.1, Pledgor and Party C shall immediately notify Pledgee in writing accordingly.

7.3 Unless an Event of Default set forth in this Section 7.1 has been successfully resolved to Pledgee's satisfaction within twenty (20) days after the Pledgee and /or Party C delivers a notice to the Pledgor requesting ratification of such Event of Default, Pledgee may issue a Notice of Default to Pledgor in writing at any time thereafter, demanding the Pledgor to immediately exercise the Pledge in accordance with the provisions of Section 8 of this Agreement.

8. Exercise of Pledge

8.1 Pledgee shall issue a written Notice of Default to Pledgor when it exercises the Pledge.

8.2 Subject to the provisions of Section 7.3, Pledgee may exercise the right to enforce the Pledge at any time after the issuance of the Notice of Default in accordance with Section 8.1. Once Pledgee elects to enforce the Pledge, Pledgor shall cease to be entitled to any rights or interests associated with the Equity Interest.

8.3 After Pledgee issues a Notice of Default to Pledgor in accordance with Section 8.1, Pledgee may exercise any remedy measure under applicable PRC laws, the Transaction Documents and this Agreement, including but not limited to being paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest. The Pledgee shall not be liable for any loss incurred by its duly exercise of such rights and powers.

8.4 The proceeds from exercise of the Pledge by Pledgee shall be used to pay for tax and expenses incurred as result of disposing the Equity Interest and to perform Contract Obligations and pay the Secured Indebtedness to the Pledgee prior and in preference to any other payment. After the payment of the aforementioned amounts, the remaining balance shall be returned to Pledgor or any other person who have rights to such balance under applicable laws or be deposited to the local notary public office where Pledgor resides, with all expense incurred being borne by Pledgor. To the extent permitted under applicable PRC laws, Pledgor shall unconditionally donate the aforementioned proceeds to Pledgee or any other person designated by Pledgee.

8.5 Pledgee may exercise any remedy measure available simultaneously or in any order. Pledgee may exercise the right to being paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest under this Agreement, without exercising any other remedy measure first.

8.6 Pledgee is entitled to designate an attorney or other representatives to exercise the Pledge on its behalf, and Pledgor or Party C shall not raise any objection to such exercise.

8.7 When Pledgee disposes of the Pledge in accordance with this Agreement, Pledgor and Party C shall provide necessary assistance to enable Pledgee to enforce the Pledge in accordance with this Agreement.

9. Breach of Agreement

9.1 If Pledgor or Party C conducts any material breach of any term of this Agreement, Pledgee shall have right to terminate this Agreement and/or require Pledgor or

Party C to indemnify all damages; this Section 9 shall not prejudice any other rights of Pledgee herein;

9.2 Pledgor or Party C shall not have any right to terminate this Agreement in any event unless otherwise required by applicable laws.

10. Assignment

10.1 Without Pledgee's prior written consent, Pledgor and Party C shall not have the right to assign or delegate their rights and obligations under this Agreement.

10.2 This Agreement shall be binding on Pledgor and his/her successors and permitted assigns, and shall be valid with respect to Pledgee and each of his/her successors and assigns.

10.3 At any time, Pledgee may assign any and all of its rights and obligations under the Transaction Documents and this Agreement to its designee(s), in which case the assigns shall have the rights and obligations of Pledgee under the Transaction Documents and this Agreement, as if it were the original party to the Transaction Documents and this Agreement.

10.4 In the event of change of Pledgee due to assignment, Pledgor and/or Party C shall, at the request of Pledgee, execute a new pledge agreement with the new pledgee on the same terms and conditions as this Agreement, and register the same with the relevant AIC.

10.5 Pledgor and Party C shall strictly abide by the provisions of this Agreement and other contracts jointly or separately executed by the Parties hereto or any of them, including the Transaction Documents, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof. Any remaining rights of Pledgor with respect to the Equity Interest pledged hereunder shall not be exercised by Pledgor except in accordance with the written instructions of Pledgee.

11. Termination

11.1 Upon the fulfillment of all Contract Obligations and the full payment of all Secured Indebtedness by Pledgor and Party C, Pledgee shall release the Pledge under this Agreement upon Pledgor's request as soon as reasonably practicable and shall assist Pledgor to de-register the Pledge from the shareholders' register of Party C and with relevant PRC local administration for industry and commerce. Pledgee acknowledges that, once Pledgee can hold Party C's equity interest directly and Party C can continue to undertake its business legally or Pledgee can undertake Party C's business legally pursuant to the PRC laws and regulatory policy, Pledgee will exercise the Equity Purchase Option under the Exclusive Option Agreement or the Asset Purchase Option in Section 1.5 thereof as soon as possible, so that Pledgee can operate Party C's business directly or hold Party C's equity directly. For the avoidance of doubt, this acknowledgement is made by Pledgee to meet the requirements of the regulatory authorities in the place where the controlling shareholder of Party A is listed, and Pledgor and Party C shall not assert any claims and rights against Pledgee thereupon. In addition, in this case, the Parties shall adopt reasonable measures to assist with the termination of the Transaction Documents.

11.2 The provisions under Sections 9, 13, 14 and 11.2 herein of this Agreement shall survive the expiration or termination of this Agreement.

12. Handling Fees and Other Expenses

All fees and out of pocket expenses relating to this Agreement, including but not limited to legal costs, costs of production, stamp tax and any other taxes and fees, shall be borne by Party C.

13. Confidentiality

The Parties acknowledge that the existence and the terms of this Agreement and any oral or written information exchanged between the Parties in connection with the preparation and performance this Agreement are regarded as confidential information. Each Party shall maintain confidentiality of all such confidential information, and without obtaining the written consent of the other Party, it shall not disclose any relevant confidential information to any third parties, except for the information that: (a) is or will be in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, rules of any stock exchange, or orders of the court or other government authorities; or (c) is required to be disclosed by any Party to its shareholders, directors, employees, legal counsels or financial advisors regarding the transaction contemplated hereunder, provided that such shareholders, directors, employees, legal counsels or financial advisors shall be bound by the confidentiality obligations similar to those set forth in this Section. Disclosure of any confidential information by the shareholders, director, employees of or agencies engaged by any Party shall be deemed disclosure of such confidential information by such Party and such Party shall be held liable for breach of this Agreement.

14. Governing Law and Resolution of Disputes

14.1 The execution, effectiveness, construction, performance, amendment and termination of this Agreement and the resolution of disputes hereunder shall be governed by the laws of China.

14.2 In the event of any dispute with respect to the construction and performance of this Agreement, the Parties shall first resolve the dispute through friendly negotiations. In the event the Parties fail to reach an agreement on the dispute within 30 days after either Party's request to the other Parties for resolution of the dispute through negotiations, either Party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration, in accordance with its Arbitration Rules. The arbitration shall be conducted in Shanghai. The arbitration award shall be final and binding on all Parties. Subject to the provisions of the laws of China, the arbitrator may impose restrictions and/or dispose of Party's C equity interests or land and other assets (such as for award of remedies), grant injunction (such as for the conduct of business or compelling the transfer of assets), or grant other interim relief, or order winding up of Party C through arbitration. Parties agree that subject to the provisions of the laws of China, pending the formation of arbitration tribunal or in appropriate cases, the courts with jurisdiction (including the courts in Hong Kong, the place of incorporation of the listed company associated with Party A, the place of incorporation of Party C, and the place where the principal assets of listed company associated with Party A or Party C are located) shall have the right to grant interim relief in support of the arbitration. The validity of this Section shall not be subject to any change, cancellation or termination of this Agreement. After arbitration award takes effect, either Party shall have the right to apply to the said courts with jurisdiction for enforcement of the arbitration award.

14.3 Upon the occurrence of any disputes arising from the construction and performance of this Agreement or during the pending arbitration of any dispute, except for the matters under dispute, the Parties to this Agreement shall continue to exercise their respective rights under this Agreement and perform their respective obligations under this Agreement.

15. Notices

15.1 All notices and other communications required or permitted to be given pursuant to this Agreement shall be delivered personally or sent by registered mail, postage prepaid, by a commercial courier service or by facsimile transmission to the address of such party set forth below. A confirmation copy of each notice shall also be sent by E-mail. The dates on which notices shall be deemed to have been effectively given shall be determined as follows:

15.2 Notices given by personal delivery, by courier service or by registered mail, postage prepaid, shall be deemed effectively given on the date of delivery or refusal at the address specified for notices.

15.3 Notices given by facsimile transmission shall be deemed effectively given on the date of successful transmission (as evidenced by an automatically generated confirmation of transmission).

15.4 For the purpose of notices, the addresses of the Parties are as follows:

Party A: Hangzhou Tuya Information Technology Co., Ltd.
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou
Attn: Liaohan CHEN

Party B: Liaohan CHEN
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou

Party C: Hangzhou Tuya Technology Co., Ltd.
Address: Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou
Attn: Liaohan CHEN

15.5 Any Party may at any time change its address for notices by a notice delivered to the other Parties in accordance with the terms hereof.

16. Severability

In the event that one or several of the provisions of this Contract are found to be invalid, illegal or unenforceable in any aspect in accordance with any laws or regulations, the validity, legality or enforceability of the remaining provisions of this Contract shall not be affected or compromised in any respect. The Parties shall strive in good faith to replace such invalid, illegal or unenforceable provisions with effective provisions that accomplish to the greatest extent permitted by law and the intentions of the Parties, and the economic effect of such effective provisions shall be as close as possible to the economic effect of those invalid, illegal or unenforceable provisions.

17. Attachments

The attachments set forth herein shall be an integral part of this Agreement.

18. Effectiveness

18.1 This Agreement shall become effective upon execution by the Parties.

18.2 Any amendments, changes and supplements to this Agreement shall be in writing and shall become effective upon completion of the governmental filing procedures (if applicable) after the affixation of the signatures or seals of the Parties. To the extent that it is reasonably practicable and not in violation of the laws of China, the Parties hereto shall modify this Agreement in relation to the laws, regulations or regulatory opinions issued by the regulatory authorities in the place where the controlling shareholder of Party A is listed so that this Agreement meets the relevant requirements, if necessary.

19. Language and Counterparts

This Agreement is written in Chinese and English in four copies. Pledgor, Pledgee and Party C shall hold one copy respectively and the other copy shall be used for registration. The Chinese version and English version shall have equal legal validity.

The Remainder of this page is intentionally left blank

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Equity Interest Pledge Agreement as of the date first above written.

Party A: Hangzhou Tuya Information Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Equity Interest Pledge Agreement as of the date first above written.

Party B: Liaohan CHEN

By: /s/ Liaohan CHEN

IN W ITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Equity Interest Pledge Agreement as of the date first above written.

Party C: Hangzhou Tuya Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Attachments:

I. Shareholders' Register of Party C

2. Exclusive Business Cooperation Agreement

3. Exclusive Option Agreement

4. Power of Attorney

Exhibit 4.6

Amended and Restated Equity Interest Pledge Agreement

This Amended and Restated Equity Interest Pledge Agreement (this "Agreement") has been executed by and among the following parties on January 19, 2022 in Hangzhou, the People's Republic of China ("China" or the "PRC"):

Party A: Hangzhou Tuya Information Technology Co., Ltd. (formerly Hangzhou Aixiangji Technology Co., Ltd., hereinafter "Pledgee"), a wholly foreign owned enterprise, organized and existing under the laws of the PRC, with its address at Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou;

Party B: Peihong CHEN (hereinafter "Pledgor"), a Chinese citizen with Chinese Identification No.*****; and

Party C: Hangzhou Tuya Technology Co., Ltd., a limited liability company organized and existing under the laws of the PRC, with its address at Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou.

In this Agreement, each of Pledgee, Pledgor and Party C shall be referred to as a "Party" respectively, and they shall be collectively referred to as the "Parties".

Whereas:

1. The Parties are parties who entered into the Equity Interest Pledge Agreement dated December 23, 2014 (the "Original Agreement"). The Original Agreement provided that any amendments, modifications and supplements to the Original Agreement shall

require the execution of a written agreement by the Parties. The Parties intend to enter into this Agreement in order to amend, restate and replace in its entirety the rights and obligations under in the Original Agreement with the rights and obligations provided in this Agreement. The registration of equity pledge under the Original Agreement which has been completed and remains valid is not subject to the amendment and restatement and continue to be valid. No re-registration is required for the Parties.

2. Pledgor is a citizen of China who as of the date hereof holds 4.91% of equity interests of Party C. Party C is a limited liability company registered in Hangzhou, Zhejiang, China. Party C acknowledges the respective rights and obligations of Pledgor and Pledgee under this Agreement, and intends to provide any necessary assistance in registering the Pledge;

3. Pledgee is a wholly foreign-owned enterprise registered in China. Pledgee and Party C which is partially owned by Pledgor have executed an Exclusive Business Cooperation Agreement (as defined below); Party C, Pledgee and Pledgor have executed an Exclusive Option Agreement (as defined below); Pledgor has executed a Power of Attorney (as defined below) in favor of Pledgee.

4. To ensure that Party C and Pledgor fully perform their obligations under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and the Power of Attorney, Pledgor hereby pledges to the Pledgee all of the equity interest that Pledgor holds in Party C as security for Party C's and Pledgor's obligations under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and the Power of Attorney.

5. To perform the provisions of the Transaction Documents (as defined below), the Parties have mutually agreed to execute this Agreement upon the following terms.

1. Definitions

Unless otherwise provided herein, the terms below shall have the following meanings:

1.1 Pledge: shall refer to the security interest granted by Pledgor to Pledgee pursuant to Section 2 of this Agreement, i.e., the right of Pledgee to be paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest.

1.2 Equity Interest: shall refer to 4.91% equity interests in Party C currently held by Pledgor, and all of the equity interest hereafter acquired by Pledgor in Party C.

1.3 Term of Pledge: shall refer to the term set forth in Section 3 of this Agreement.

1.4 Transaction Documents: shall refer to the Exclusive Business Cooperation Agreement executed by and between Party C and Pledgee on December 23, 2014 and any modifications, amendments and/or restatements thereto (the "Exclusive Business Cooperation Agreement"), the Exclusive Option Agreement executed by and among Pledgor, Party C, and Pledgee on December 23, 2014 and any modifications, amendments and/or restatements thereto (the "Exclusive Option Agreement"), Power of Attorney executed on December 23, 2014 by Pledgor and any modifications, amendments and/or restatements thereto (the "Power of Attorney").

1.5 Contract Obligations: shall refer to all the obligations of Pledgor under the Exclusive Option Agreement, the Power of Attorney and this Agreement; all the obligations of Party C under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and this Agreement.

1.6 Secured Indebtedness: shall refer to all the direct, indirect and derivative losses and losses of anticipated profits, suffered by Pledgee, incurred as a result of any Event of Default. The amount of such loss shall be calculated in accordance with the reasonable business plan and profit forecast of Pledgee, the consulting and service fees payable to Pledgee under the Exclusive Business Cooperation Agreement, all expenses occurred in connection with enforcement by Pledgee of Pledgor's and/or Party C's Contract Obligations and etc.

1.7 Event of Default: shall refer to any of the circumstances set forth in Section 7 of this Agreement.

1.8 Notice of Default: shall refer to the notice issued by Pledgee in accordance with this Agreement declaring an Event of Default.

2. Pledge

2.1 Pledgor agrees to pledge all the Equity Interest as security for performance of the Contract Obligations and payment of the Secured Indebtedness under this Agreement. Party C hereby assents that Pledgor pledges the Equity Interest to the Pledgee pursuant to this Agreement.

2.2 During the term of the Pledge, Pledgee is entitled to receive dividends distributed on the Equity Interest. Pledgor may receive dividends distributed on the Equity Interest only with prior written consent of Pledgee. Dividends received by Pledgor on Equity Interest after deduction of individual income tax paid by Pledgor shall be, as required by Pledgee, (1) deposited into an account designated and supervised by Pledgee and used to secure the Contract Obligations and pay the Secured Indebtedness prior and in preference to make any other payment; or (2) unconditionally donated to Pledgee or any other person designated by Pledgee to the extent permitted under applicable PRC laws.

2.3 Pledgor may subscribe for capital increase in Party C only with prior written consent of Pledgee. Any equity interest obtained by Pledgor as a result of Pledgor's subscription of the increased registered capital of the Company shall also be deemed as Equity Interest.

2.4 In the event that Party C is required by PRC law or upon the written consent by Party A to be liquidated or dissolved, any interest distributed to Pledgor upon Party C's dissolution or liquidation shall, upon the request of the Pledgee, be (1) deposited into an account designate and supervised by Pledgee and used to secure the Contract Obligations and pay the Secured Indebtedness prior and in preference to make any other payment; or (2) unconditionally donated to Pledgee or any other person designated by Pledgee to the extent permitted under applicable PRC laws.

3. Term of Pledge

3.1 The Pledge shall become effective on such date when the pledge of the Equity Interest contemplated herein is registered with relevant administration for industry and commerce (the "AIC"). The Pledge shall remain effective until all Contract Obligations have been fully performed and all Secured Indebtedness have been fully paid. Pledgor and Party C shall (1) register the Pledge in the shareholders' register of Party C within 3 business days following the execution of this Agreement, and (2) submit an application to the AIC for the registration of the Pledge of the Equity Interest contemplated herein within 30 business days following the execution of this Agreement. The parties covenant that for the purpose of registration of the Pledge, the parties hereto and all other shareholders of Party C shall submit to the AIC this Agreement or an equity interest pledge

contract in the form required by the AIC at the location of Party C which shall truly reflect the information of the Pledge hereunder (the "AIC Pledge Contract"). For matters not specified in the AIC Pledge Contract or any discrepancies with this Agreement, the parties shall be bound by the provisions of this Agreement. Pledgor and Party C shall submit all necessary documents and complete all necessary procedures, as required by the PRC laws and regulations and the relevant AIC, to ensure that the Pledge of the Equity Interest shall be registered with the AIC as soon as possible after submission for filing.

3.2 During the Term of Pledge, in the event Pledgor and/or Party C fails to perform the Contract Obligations or pay Secured Indebtedness, Pledgee shall have the right, but not the obligation, to exercise the Pledge in accordance with the provisions of this Agreement.

4. Custody of Records for Equity Interest subject to Pledge

4.1 During the Term of Pledge set forth in this Agreement, Pledgor shall deliver to Pledgee's custody the shareholders' register containing the Pledge within one week from the execution of this Agreement. Pledgee shall have custody of such document during the entire Term of Pledge set forth in this Agreement.

5. Representations and Warranties of Pledgor and Party C

As of the execution date of this Agreement, Pledgor and Party C hereby jointly and severally represent and warrant to Pledgee that:

5.1 Pledgor is the sole legal and beneficial owner of the Equity Interest.

5.2 Pledgee shall have the right to dispose of and transfer the Equity Interest in accordance with the provisions set forth in this Agreement.

5.3 Except for the Pledge, Pledgor has not placed any security interest or other encumbrance on the Equity Interest.

5.4 Pledgor and Party C have obtained any and all approvals and consents from applicable government authorities and third parties (if required) for execution, delivery and performance of this Agreement.

5.5 The execution, delivery and performance of this Agreement will not: (i) violate any relevant PRC laws (except for Section 14.2 of this Agreement); (ii) conflict with Party C's articles of association or other constitutional documents; (iii) result in any breach of or constitute any default under any contract or instrument to which it is a party or by which it is otherwise bound; (iv) result in any violation of any condition for the grant and/or maintenance of any permit or approval granted to any Party; or (v) cause any permit or approval granted to any Party to be suspended, cancelled or attached with additional conditions.

6. Covenants of Pledgor and Party C

6.1 During the term of this Agreement, Pledgor and Party C hereby jointly and severally covenant to the Pledgee:

6.1.1 Pledgor shall not transfer the Equity Interest, place or permit the existence of any security interest or other encumbrance on the Equity Interest or any portion thereof, without the prior written consent of Pledgee, except for the performance of the Transaction Documents;

6.1.2 Pledgor and Party C shall comply with the provisions of all laws and regulations applicable to the pledge of rights, and within five (5) days of

receipt of any notice, order or recommendation issued or prepared by relevant competent authorities regarding the Pledge, shall present the aforementioned notice, order or recommendation to Pledgee, and shall comply with the aforementioned notice, order or recommendation or submit objections and representations with respect to the aforementioned matters upon Pledgee's reasonable request or upon consent of Pledgee;

6.1.3 Pledgor and Party C shall promptly notify Pledgee of any event or notice received by Pledgor that may have an impact on the Equity Interest or any portion thereof, as well as any event or notice received by Pledgor that may have an impact on any guarantees and other obligations of Pledgor arising out of this Agreement.

6.1.4 Party C shall complete the registration procedures for extension of the term of operation within three (3) months prior to the expiration of such term to maintain the validity of this Agreement.

6.2 Pledgor agrees that the rights acquired by Pledgee in accordance with this Agreement with respect to the Pledge shall not be interrupted or harmed by Pledgor or any heirs or representatives of Pledgor or any other persons through any legal proceedings. Any heirs or representatives of the Pledgor shall cooperate with the other Parties to this Agreement to make all necessary arrangements and sign all necessary documents, ensuring the fulfillment of this Agreement will not be harmed or prevented by these heirs or representatives.

6.3 To protect or perfect the security interest granted by this Agreement for the Contract Obligations and Secured Indebtedness, Pledgor hereby undertakes to execute in good faith and to cause other parties who have an interest in the Pledge to execute all certificates, agreements, deeds and/or covenants required by Pledgee. Pledgor also undertakes to perform and to cause other parties who have an interest in the Pledge to perform actions required by Pledgee, to facilitate the exercise by Pledgee of its rights and authority granted thereto by this Agreement, and to enter into all relevant documents regarding ownership of Equity Interest with Pledgee or designee(s) of Pledgee (natural persons/legal persons). Pledgor undertakes to provide Pledgee within a reasonable time with all notices, orders and decisions regarding the Pledge that are required by Pledgee.

6.4 Pledgor hereby undertakes to comply with and perform all guarantees, promises, agreements, representations and conditions under this Agreement. In the event of failure or partial performance of its guarantees, promises, agreements, representations and conditions, Pledgor shall indemnify Pledgee for all losses resulting therefrom.

7. Event of Breach

7.1 The following circumstances shall be deemed Event of Default:

7.1.1 Pledgor's any breach to any representations, warranties or obligations under the Transaction Documents and/or this Agreement;

7.1.2 Party C's any breach to any representations, warranties or obligations under the Transaction Documents and/or this Agreement;

7.1.3 Any or various obligation(s) of Party B or Party C under the Transaction Documents and/or this Agreement is/are treated as illegal or void transaction.

7.2 Upon notice or discovery of the occurrence of any circumstances or event that may lead to the aforementioned circumstances described in Section 7.1, Pledgor and Party C shall immediately notify Pledgee in writing accordingly.

7.3 Unless an Event of Default set forth in this Section 7.1 has been successfully resolved to Pledgee's satisfaction within twenty (20) days after the Pledgee and /or Party C delivers a notice to the Pledgor requesting ratification of such Event of Default, Pledgee may issue a Notice of Default to Pledgor in writing at any time thereafter, demanding the Pledgor to immediately exercise the Pledge in accordance with the provisions of Section 8 of this Agreement.

8. Exercise of Pledge

8.1 Pledgee shall issue a written Notice of Default to Pledgor when it exercises the Pledge.

8.2 Subject to the provisions of Section 7.3, Pledgee may exercise the right to enforce the Pledge at any time after the issuance of the Notice of Default in accordance with Section 8.1. Once Pledgee elects to enforce the Pledge, Pledgor shall cease to be entitled to any rights or interests associated with the Equity Interest.

8.3 After Pledgee issues a Notice of Default to Pledgor in accordance with Section 8.1, Pledgee may exercise any remedy measure under applicable PRC laws, the Transaction Documents and this Agreement, including but not limited to being paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest. The Pledgee shall not be liable for any loss incurred by its duly exercise of such rights and powers.

8.4 The proceeds from exercise of the Pledge by Pledgee shall be used to pay for tax and expenses incurred as result of disposing the Equity Interest and to perform Contract Obligations and pay the Secured Indebtedness to the Pledgee prior and in preference to any other payment. After the payment of the aforementioned amounts, the remaining balance shall be returned to Pledgor or any other person who have rights to such balance under applicable laws or be deposited to the local notary public office where Pledgor resides, with all expense incurred being borne by Pledgor. To the extent permitted under applicable PRC laws, Pledgor shall unconditionally donate the aforementioned proceeds to Pledgee or any other person designated by Pledgee.

8.5 Pledgee may exercise any remedy measure available simultaneously or in any order. Pledgee may exercise the right to being paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest under this Agreement, without exercising any other remedy measure first.

8.6 Pledgee is entitled to designate an attorney or other representatives to exercise the Pledge on its behalf, and Pledgor or Party C shall not raise any objection to such exercise.

8.7 When Pledgee disposes of the Pledge in accordance with this Agreement, Pledgor and Party C shall provide necessary assistance to enable Pledgee to enforce the Pledge in accordance with this Agreement.

9. Breach of Agreement

9.1 If Pledgor or Party C conducts any material breach of any term of this Agreement, Pledgee shall have right to terminate this Agreement and/or require Pledgor or

Party C to indemnify all damages; this Section 9 shall not prejudice any other rights of Pledgee herein;

9.2 Pledgor or Party C shall not have any right to terminate this Agreement in any event unless otherwise required by applicable laws.

10. Assignment

10.1 Without Pledgee's prior written consent, Pledgor and Party C shall not have the right to assign or delegate their rights and obligations under this Agreement.

10.2 This Agreement shall be binding on Pledgor and his/her successors and permitted assigns, and shall be valid with respect to Pledgee and each of his/her successors and assigns.

10.3 At any time, Pledgee may assign any and all of its rights and obligations under the Transaction Documents and this Agreement to its designee(s), in which case the assigns shall have the rights and obligations of Pledgee under the Transaction Documents and this Agreement, as if it were the original party to the Transaction Documents and this Agreement.

10.4 In the event of change of Pledgee due to assignment, Pledgor and/or Party C shall, at the request of Pledgee, execute a new pledge agreement with the new pledgee on the same terms and conditions as this Agreement, and register the same with the relevant AIC.

10.5 Pledgor and Party C shall strictly abide by the provisions of this Agreement and other contracts jointly or separately executed by the Parties hereto or any of them, including the Transaction Documents, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof. Any remaining rights of Pledgor with respect to the Equity Interest pledged hereunder shall not be exercised by Pledgor except in accordance with the written instructions of Pledgee.

11. Termination

11.1 Upon the fulfillment of all Contract Obligations and the full payment of all Secured Indebtedness by Pledgor and Party C, Pledgee shall release the Pledge under this Agreement upon Pledgor's request as soon as reasonably practicable and shall assist Pledgor to de-register the Pledge from the shareholders' register of Party C and with relevant PRC local administration for industry and commerce. Pledgee acknowledges that, once Pledgee can hold Party C's equity interest directly and Party C can continue to undertake its business legally or Pledgee can undertake Party C's business legally pursuant to the PRC laws and regulatory policy, Pledgee will exercise the Equity Purchase Option under the Exclusive Option Agreement or the Asset Purchase Option in Section 1.5 thereof as soon as possible, so that Pledgee can operate Party C's business directly or hold Party C's equity directly. For the avoidance of doubt, this acknowledgement is made by Pledgee to meet the requirements of the regulatory authorities in the place where the controlling shareholder of Party A is listed, and Pledgor and Party C shall not assert any claims and rights against Pledgee thereupon. In addition, in this case, the Parties shall adopt reasonable measures to assist with the termination of the Transaction Documents.

11.2 The provisions under Sections 9, 13, 14 and 11.2 herein of this Agreement shall survive the expiration or termination of this Agreement.

12. Handling Fees and Other Expenses

All fees and out of pocket expenses relating to this Agreement, including but not limited to legal costs, costs of production, stamp tax and any other taxes and fees, shall be borne by Party C.

13. Confidentiality

The Parties acknowledge that the existence and the terms of this Agreement and any oral or written information exchanged between the Parties in connection with the preparation and performance this Agreement are regarded as confidential information. Each Party shall maintain confidentiality of all such confidential information, and without obtaining the written consent of the other Party, it shall not disclose any relevant confidential information to any third parties, except for the information that: (a) is or will be in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, rules of any stock exchange, or orders of the court or other government authorities; or (c) is required to be disclosed by any Party to its shareholders, directors, employees, legal counsels or financial advisors regarding the transaction contemplated hereunder, provided that such shareholders, directors, employees, legal counsels or financial advisors shall be bound by the confidentiality obligations similar to those set forth in this Section. Disclosure of any confidential information by the shareholders, director, employees of or agencies engaged by any Party shall be deemed disclosure of such confidential information by such Party and such Party shall be held liable for breach of this Agreement.

14. Governing Law and Resolution of Disputes

14.1 The execution, effectiveness, construction, performance, amendment and termination of this Agreement and the resolution of disputes hereunder shall be governed by the laws of China.

14.2 In the event of any dispute with respect to the construction and performance of this Agreement, the Parties shall first resolve the dispute through friendly negotiations. In the event the Parties fail to reach an agreement on the dispute within 30 days after either Party's request to the other Parties for resolution of the dispute through negotiations, either Party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration, in accordance with its Arbitration Rules. The arbitration shall be conducted in Shanghai. The arbitration award shall be final and binding on all Parties. Subject to the provisions of the laws of China, the arbitrator may impose restrictions and/or dispose of Party's C equity interests or land and other assets (such as for award of remedies), grant injunction (such as for the conduct of business or compelling the transfer of assets), or grant other interim relief, or order winding up of Party C through arbitration. Parties agree that subject to the provisions of the laws of China, pending the formation of arbitration tribunal or in appropriate cases, the courts with jurisdiction (including the courts in Hong Kong, the place of incorporation of the listed company associated with Party A, the place of incorporation of Party C, and the place where the principal assets of listed company associated with Party A or Party C are located) shall have the right to grant interim relief in support of the arbitration. The validity of this Section shall not be subject to any change, cancellation or termination of this Agreement. After arbitration award takes effect, either Party shall have the right to apply to the said courts with jurisdiction for enforcement of the arbitration award.

14.3 Upon the occurrence of any disputes arising from the construction and performance of this Agreement or during the pending arbitration of any dispute, except for the matters under dispute, the Parties to this Agreement shall continue to exercise their respective rights under this Agreement and perform their respective obligations under this Agreement.

15. Notices

15.1 All notices and other communications required or permitted to be given pursuant to this Agreement shall be delivered personally or sent by registered mail, postage prepaid, by a commercial courier service or by facsimile transmission to the address of such party set forth below. A confirmation copy of each notice shall also be sent by E-mail. The dates on which notices shall be deemed to have been effectively given shall be determined as follows:

15.2 Notices given by personal delivery, by courier service or by registered mail, postage prepaid, shall be deemed effectively given on the date of delivery or refusal at the address specified for notices.

15.3 Notices given by facsimile transmission shall be deemed effectively given on the date of successful transmission (as evidenced by an automatically generated confirmation of transmission).

15.4 For the purpose of notices, the addresses of the Parties are as follows:

Party A: Hangzhou Tuya Information Technology Co., Ltd.
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou
Attn: Liaohan CHEN

Party B: Peihong CHEN
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou

Party C: Hangzhou Tuya Technology Co., Ltd.
Address: Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou
Attn: Liaohan CHEN

15.5 Any Party may at any time change its address for notices by a notice delivered to the other Parties in accordance with the terms hereof.

16. Severability

In the event that one or several of the provisions of this Contract are found to be invalid, illegal or unenforceable in any aspect in accordance with any laws or regulations, the validity, legality or enforceability of the remaining provisions of this Contract shall not be affected or compromised in any respect. The Parties shall strive in good faith to replace such invalid, illegal or unenforceable provisions with effective provisions that accomplish to the greatest extent permitted by law and the intentions of the Parties, and the economic effect of such effective provisions shall be as close as possible to the economic effect of those invalid, illegal or unenforceable provisions.

17. Attachments

The attachments set forth herein shall be an integral part of this Agreement.

18. Effectiveness

18.1 This Agreement shall become effective upon execution by the Parties.

18.2 Any amendments, changes and supplements to this Agreement shall be in writing and shall become effective upon completion of the governmental filing procedures (if applicable) after the affixation of the signatures or seals of the Parties. To the extent that it is reasonably practicable and not in violation of the laws of China, the Parties hereto shall modify this Agreement in relation to the laws, regulations or regulatory opinions issued by the regulatory authorities in the place where the controlling shareholder of Party A is listed so that this Agreement meets the relevant requirements, if necessary.

19. Language and Counterparts

This Agreement is written in Chinese and English in four copies. Pledgor, Pledgee and Party C shall hold one copy respectively and the other copy shall be used for registration. The Chinese version and English version shall have equal legal validity.

The Remainder of this page is intentionally left blank

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Equity Interest Pledge Agreement as of the date first above written.

Party A: Hangzhou Tuya Information Technology Co., Ltd.
By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Equity Interest Pledge Agreement as of the date first above written.

Party B: Peihong CHEN
By: /s/ Peihong CHEN

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Equity Interest Pledge Agreement as of the date first above written.

Party C: Hangzhou Tuya Technology Co., Ltd.
By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Attachments:

1. Shareholder's Register of Party C
2. Exclusive Business Cooperation Agreement
3. Exclusive Option Agreement
4. Power of Attorney

Exhibit 4.7

Amended and Restated Equity Interest Pledge Agreement

This Amended and Restated Equity Interest Pledge Agreement (this "Agreement") has been executed by and among the following parties on January 19, 2022 in Hangzhou, the People's Republic of China ("China" or the "PRC"):

Party A: Hangzhou Tuya Information Technology Co., Ltd. (formerly Hangzhou Aixiangji Technology Co., Ltd., hereinafter "Pledgee"), a wholly foreign owned enterprise, organized and existing under the laws of the PRC, with its address at Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou;

Party B: Ruixin ZHOU (hereinafter "Pledgor"), a Chinese citizen with Chinese Identification No.: *****; and

Party C: Hangzhou Tuya Technology Co., Ltd., a limited liability company organized and existing under the laws of the PRC, with its address at Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou.

In this Agreement, each of Pledgee, Pledgor and Party C shall be referred to as a "Party" respectively, and they shall be collectively referred to as the "Parties".

Whereas:

1. The Parties are parties who entered into the Equity Interest Pledge Agreement dated December 23, 2014 (the "Original Agreement"). The Original Agreement provided that any amendments, modifications and supplements to the Original Agreement shall

require the execution of a written agreement by the Parties. The Parties intend to enter into this Agreement in order to amend, restate and replace in its entirety the rights and obligations under in the Original Agreement with the rights and obligations provided in this Agreement. The registration of equity pledge under the Original Agreement which has been completed and remains valid is not subject to the amendment and restatement and continue to be valid. No re-registration is required for the Parties.

2. Pledgor is a citizen of China who as of the date hereof holds 9.83% of equity interests of Party C. Party C is a limited liability company registered in Hangzhou, Zhejiang, China. Party C acknowledges the respective rights and obligations of Pledgor and Pledgee under this Agreement, and intends to provide any necessary assistance in registering the Pledge;

3. Pledgee is a wholly foreign-owned enterprise registered in China. Pledgee and Party C which is partially owned by Pledgor have executed an Exclusive Business Cooperation Agreement (as defined below); Party C, Pledgee and Pledgor have executed an Exclusive Option Agreement (as defined below); Pledgor has executed a Power of Attorney (as defined below) in favor of Pledgee.

4. To ensure that Party C and Pledgor fully perform their obligations under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and the Power of Attorney, Pledgor hereby pledges to the Pledgee all of the equity interest that Pledgor holds in Party C as security for Party C's and Pledgor's obligations under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and the Power of Attorney.

5. To perform the provisions of the Transaction Documents (as defined below), the Parties have mutually agreed to execute this Agreement upon the following terms.

1. Definitions

Unless otherwise provided herein, the terms below shall have the following meanings:

1.1 Pledge: shall refer to the security interest granted by Pledgor to Pledgee pursuant to Section 2 of this Agreement, i.e., the right of Pledgee to be paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest.

1.2 Equity Interest: shall refer to 9.83% equity interests in Party C currently held by Pledgor, and all of the equity interest hereafter acquired by Pledgor in Party C.

1.3 Term of Pledge: shall refer to the term set forth in Section 3 of this Agreement.

1.4 Transaction Documents: shall refer to the Exclusive Business Cooperation Agreement executed by and between Party C and Pledgee on December 23, 2014 and any modifications, amendments and/or restatements thereto (the "Exclusive Business Cooperation Agreement"), the Exclusive Option Agreement executed by and among Pledgor, Party C, and Pledgee on December 23, 2014 and any modifications, amendments and/or restatements thereto (the "Exclusive Option Agreement"), Power of Attorney executed on December 23, 2014 by Pledgor and any modifications, amendments and/or restatements thereto (the "Power of Attorney").

1.5 Contract Obligations: shall refer to all the obligations of Pledgor under the Exclusive Option Agreement, the Power of Attorney and this Agreement; all the obligations of Party C under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and this Agreement.

1.6 Secured Indebtedness: shall refer to all the direct, indirect and derivative losses and losses of anticipated profits, suffered by Pledgee, incurred as a result of any Event of Default. The amount of such loss shall be calculated in accordance with the reasonable business plan and profit forecast of Pledgee, the consulting and service fees payable to Pledgee under the Exclusive Business Cooperation Agreement, all expenses occurred in connection with enforcement by Pledgee of Pledgor's and/or Party C's Contract Obligations and etc.

1.7 Event of Default: shall refer to any of the circumstances set forth in Section 7 of this Agreement.

1.8 Notice of Default: shall refer to the notice issued by Pledgee in accordance with this Agreement declaring an Event of Default.

2. Pledge

2.1 Pledgor agrees to pledge all the Equity Interest as security for performance of the Contract Obligations and payment of the Secured Indebtedness under this Agreement. Party C hereby assents that Pledgor pledges the Equity Interest to the Pledgee pursuant to this Agreement.

2.2 During the term of the Pledge, Pledgee is entitled to receive dividends distributed on the Equity Interest. Pledgor may receive dividends distributed on the Equity Interest only with prior written consent of Pledgee. Dividends received by Pledgor on Equity Interest after deduction of individual income tax paid by Pledgor shall be, as required by Pledgee, (1) deposited into an account designated and supervised by Pledgee and used to secure the Contract Obligations and pay the Secured Indebtedness prior and in preference to make any other payment; or (2) unconditionally donated to Pledgee or any other person designated by Pledgee to the extent permitted under applicable PRC laws.

2.3 Pledgor may subscribe for capital increase in Party C only with prior written consent of Pledgee. Any equity interest obtained by Pledgor as a result of Pledgor's subscription of the increased registered capital of the Company shall also be deemed as Equity Interest.

2.4 In the event that Party C is required by PRC law or upon the written consent by Party A to be liquidated or dissolved, any interest distributed to Pledgor upon Party C's dissolution or liquidation shall, upon the request of the Pledgee, be (1) deposited into an account designate and supervised by Pledgee and used to secure the Contract Obligations and pay the Secured Indebtedness prior and in preference to make any other payment; or (2) unconditionally donated to Pledgee or any other person designated by Pledgee to the extent permitted under applicable PRC laws.

3. Term of Pledge

3.1 The Pledge shall become effective on such date when the pledge of the Equity Interest contemplated herein is registered with relevant administration for industry and commerce (the "AIC"). The Pledge shall remain effective until all Contract Obligations have been fully performed and all Secured Indebtedness have been fully paid. Pledgor and Party C shall (1) register the Pledge in the shareholders' register of Party C within 3 business days following the execution of this Agreement, and (2) submit an application to the AIC for the registration of the Pledge of the Equity Interest contemplated herein within 30 business days following the execution of this Agreement. The parties covenant that for the purpose of registration of the Pledge, the parties hereto and all other shareholders of Party C shall submit to the AIC this Agreement or an equity interest pledge contract in the form required by the AIC at the location of Party C which shall truly reflect the information of the Pledge hereunder (the "AIC Pledge Contract"). For matters not specified in the AIC Pledge Contract or any discrepancies with this Agreement, the parties shall be bound by the provisions of this Agreement. Pledgor and Party C shall submit all necessary documents and complete all necessary procedures, as required by the PRC laws and regulations and the relevant AIC, to ensure that the Pledge of the Equity Interest shall be registered with the AIC as soon as possible after submission for filing.

3.2 During the Term of Pledge, in the event Pledgor and/or Party C fails to perform the Contract Obligations or pay Secured Indebtedness, Pledgee shall have the right, but not the obligation, to exercise the Pledge in accordance with the provisions of this Agreement.

4. Custody of Records for Equity Interest subject to Pledge

4.1 During the Term of Pledge set forth in this Agreement, Pledgor shall deliver to Pledgee's custody the shareholders' register containing the Pledge within one week from the execution of this Agreement. Pledgee shall have custody of such document during the entire Term of Pledge set forth in this Agreement.

5. Representations and Warranties of Pledgor and Party C

As of the execution date of this Agreement, Pledgor and Party C hereby jointly and severally represent and warrant to Pledgee that:

5.1 Pledgor is the sole legal and beneficial owner of the Equity Interest.

5.2 Pledgee shall have the right to dispose of and transfer the Equity Interest in accordance with the provisions set forth in this Agreement.

5.3 Except for the Pledge, Pledgor has not placed any security interest or other encumbrance on the Equity Interest.

5.4 Pledgor and Party C have obtained any and all approvals and consents from applicable government authorities and third parties (if required) for execution, delivery and performance of this Agreement.

5.5 The execution, delivery and performance of this Agreement will not: (i) violate any relevant PRC laws (except for Section 14.2 of this Agreement); (ii) conflict with Party C's articles of association or other constitutional documents; (iii) result in any breach of or constitute any default under any contract or instrument to which it is a party or by which it is otherwise bound; (iv) result in any violation of any

condition for the grant and/or maintenance of any permit or approval granted to any Party; or (v) cause any permit or approval granted to any Party to be suspended, cancelled or attached with additional conditions.

6. Covenants of Pledgor and Party C

6.1 During the term of this Agreement, Pledgor and Party C hereby jointly and severally covenant to the Pledgee:

6.1.1 Pledgor shall not transfer the Equity Interest, place or permit the existence of any security interest or other encumbrance on the Equity Interest or any portion thereof, without the prior written consent of Pledgee, except for the performance of the Transaction Documents;

6.1.2 Pledgor and Party C shall comply with the provisions of all laws and regulations applicable to the pledge of rights, and within five (5) days of receipt of any notice, order or recommendation issued or prepared by relevant competent authorities regarding the Pledge, shall present the aforementioned notice, order or recommendation to Pledgee, and shall comply with the aforementioned notice, order or recommendation or submit objections and representations with respect to the aforementioned matters upon Pledgee's reasonable request or upon consent of Pledgee;

6.1.3 Pledgor and Party C shall promptly notify Pledgee of any event or notice received by Pledgor that may have an impact on the Equity Interest or any portion thereof, as well as any event or notice received by Pledgor that may have an impact on any guarantees and other obligations of Pledgor arising out of this Agreement.

6.1.4 Party C shall complete the registration procedures for extension of the term of operation within three (3) months prior to the expiration of such term to maintain the validity of this Agreement.

6.2 Pledgor agrees that the rights acquired by Pledgee in accordance with this Agreement with respect to the Pledge shall not be interrupted or harmed by Pledgor or any heirs or representatives of Pledgor or any other persons through any legal proceedings. Any heirs or representatives of the Pledgor shall cooperate with the other Parties to this Agreement to make all necessary arrangements and sign all necessary documents, ensuring the fulfillment of this Agreement will not be harmed or prevented by these heirs or representatives.

6.3 To protect or perfect the security interest granted by this Agreement for the Contract Obligations and Secured Indebtedness, Pledgor hereby undertakes to execute in good faith and to cause other parties who have an interest in the Pledge to execute all certificates, agreements, deeds and/or covenants required by Pledgee. Pledgor also undertakes to perform and to cause other parties who have an interest in the Pledge to perform actions required by Pledgee, to facilitate the exercise by Pledgee of its rights and authority granted thereto by this Agreement, and to enter into all relevant documents regarding ownership of Equity Interest with Pledgee or designee(s) of Pledgee (natural persons/legal persons). Pledgor undertakes to provide Pledgee within a reasonable time with all notices, orders and decisions regarding the Pledge that are required by Pledgee.

6.4 Pledgor hereby undertakes to comply with and perform all guarantees, promises, agreements, representations and conditions under this Agreement. In the event of failure or partial performance of its guarantees, promises, agreements,

representations and conditions, Pledgor shall indemnify Pledgee for all losses resulting therefrom.

7. Event of Breach

7.1 The following circumstances shall be deemed Event of Default:

7.1.1 Pledgor's any breach to any representations, warranties or obligations under the Transaction Documents and/or this Agreement;

7.1.2 Party C's any breach to any representations, warranties or obligations under the Transaction Documents and/or this Agreement;

7.1.3 Any or various obligation(s) of Party B or Party C under the Transaction Documents and/or this Agreement is/are treated as illegal or void transaction.

7.2 Upon notice or discovery of the occurrence of any circumstances or event that may lead to the aforementioned circumstances described in Section 7.1, Pledgor and Party C shall immediately notify Pledgee in writing accordingly.

7.3 Unless an Event of Default set forth in this Section 7.1 has been successfully resolved to Pledgee's satisfaction within twenty (20) days after the Pledgee and /or Party C delivers a notice to the Pledgor requesting ratification of such Event of Default, Pledgee may issue a Notice of Default to Pledgor in writing at any time thereafter, demanding the Pledgor to immediately exercise the Pledge in accordance with the provisions of Section 8 of this Agreement.

8. Exercise of Pledge

8.1 Pledgee shall issue a written Notice of Default to Pledgor when it exercises the Pledge.

8.2 Subject to the provisions of Section 7.3, Pledgee may exercise the right to enforce the Pledge at any time after the issuance of the Notice of Default in accordance with Section 8.1. Once Pledgee elects to enforce the Pledge, Pledgor shall cease to be entitled to any rights or interests associated with the Equity Interest.

8.3 After Pledgee issues a Notice of Default to Pledgor in accordance with Section 8.1, Pledgee may exercise any remedy measure under applicable PRC laws, the Transaction Documents and this Agreement, including but not limited to being paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest. The Pledgee shall not be liable for any loss incurred by its duly exercise of such rights and powers.

8.4 The proceeds from exercise of the Pledge by Pledgee shall be used to pay for tax and expenses incurred as result of disposing the Equity Interest and to perform Contract Obligations and pay the Secured Indebtedness to the Pledgee prior and in preference to any other payment. After the payment of the aforementioned amounts, the remaining balance shall be returned to Pledgor or any other person who have rights to such balance under applicable laws or be deposited to the local notary public office where Pledgor resides, with all expense incurred being borne by Pledgor. To the extent permitted under applicable PRC laws, Pledgor shall unconditionally donate the aforementioned proceeds to Pledgee or any other person designated by Pledgee.

8.5 Pledgee may exercise any remedy measure available simultaneously or in any order. Pledgee may exercise the right to being paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest under this Agreement, without exercising any other remedy measure first.

8.6 Pledgee is entitled to designate an attorney or other representatives to exercise the Pledge on its behalf, and Pledgor or Party C shall not raise any objection to such exercise.

8.7 When Pledgee disposes of the Pledge in accordance with this Agreement, Pledgor and Party C shall provide necessary assistance to enable Pledgee to enforce the Pledge in accordance with this Agreement.

9. Breach of Agreement

9.1 If Pledgor or Party C conducts any material breach of any term of this Agreement, Pledgee shall have right to terminate this Agreement and/or require Pledgor or Party C to indemnify all damages; this Section 9 shall not prejudice any other rights of Pledgee herein;

9.2 Pledgor or Party C shall not have any right to terminate this Agreement in any event unless otherwise required by applicable laws.

10. Assignment

10.1 Without Pledgee's prior written consent, Pledgor and Party C shall not have the right to assign or delegate their rights and obligations under this Agreement.

10.2 This Agreement shall be binding on Pledgor and his/her successors and permitted assigns, and shall be valid with respect to Pledgee and each of his/her successors and assigns.

10.3 At any time, Pledgee may assign any and all of its rights and obligations under the Transaction Documents and this Agreement to its designee(s), in which case the assigns shall have the rights and obligations of Pledgee under the Transaction Documents and this Agreement, as if it were the original party to the Transaction Documents and this Agreement.

10.4 In the event of change of Pledgee due to assignment, Pledgor and/or Party C shall, at the request of Pledgee, execute a new pledge agreement with the new pledgee on the same terms and conditions as this Agreement, and register the same with the relevant AIC.

10.5 Pledgor and Party C shall strictly abide by the provisions of this Agreement and other contracts jointly or separately executed by the Parties hereto or any of them, including the Transaction Documents, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof. Any remaining rights of Pledgor with respect to the Equity Interest pledged hereunder shall not be exercised by Pledgor except in accordance with the written instructions of Pledgee.

11. Termination

11.1 Upon the fulfillment of all Contract Obligations and the full payment of all Secured Indebtedness by Pledgor and Party C, Pledgee shall release the Pledge under this Agreement upon Pledgor's request as soon as reasonably practicable and shall assist Pledgor to de-register the Pledge from the shareholders' register of Party C and with relevant PRC local administration for industry and commerce. Pledgee acknowledges that, once Pledgee can hold Party C's equity interest directly and Party C can continue to undertake its business legally or Pledgee can undertake Party C's business legally pursuant to the PRC laws and regulatory policy, Pledgee will exercise the Equity Purchase Option under the Exclusive Option Agreement or the Asset Purchase Option in Section 1.5 thereof as soon as possible, so that Pledgee can operate Party C's business directly or hold Party C's equity directly. For the avoidance of doubt, this acknowledgement is made by Pledgee to meet the requirements of the regulatory authorities in the place where the controlling shareholder of Party A is listed, and Pledgor and Party C shall not assert any claims and rights against Pledgee thereupon. In addition, in this case, the Parties shall adopt reasonable measures to assist with the termination of the Transaction Documents.

11.2 The provisions under Sections 9, 13, 14 and 11.2 herein of this Agreement shall survive the expiration or termination of this Agreement.

12. Handling Fees and Other Expenses

All fees and out of pocket expenses relating to this Agreement, including but not limited to legal costs, costs of production, stamp tax and any other taxes and fees, shall be borne by Party C.

13. Confidentiality

The Parties acknowledge that the existence and the terms of this Agreement and any oral or written information exchanged between the Parties in connection with the preparation and performance this Agreement are regarded as confidential information. Each Party shall maintain confidentiality of all such confidential information, and without obtaining the written consent of the other Party, it shall not disclose any relevant confidential information to any third parties, except for the information that: (a) is or will be in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, rules of any stock exchange, or orders of the court or other government authorities; or (c) is required to be disclosed by any Party to its shareholders, directors, employees, legal counsels or financial advisors regarding the transaction contemplated hereunder, provided that such shareholders, directors, employees, legal counsels or financial advisors shall be bound by the confidentiality obligations similar to those set forth in this Section. Disclosure of any confidential information by the shareholders, director, employees of or agencies engaged by any Party shall be deemed disclosure of such confidential information by such Party and such Party shall be held liable for breach of this Agreement.

14. Governing Law and Resolution of Disputes

14.1 The execution, effectiveness, construction, performance, amendment and termination of this Agreement and the resolution of disputes hereunder shall be governed by the laws of China.

14.2 In the event of any dispute with respect to the construction and performance of this Agreement, the Parties shall first resolve the dispute through friendly negotiations. In the event the Parties fail to reach an agreement on the dispute within 30 days after either Party's request to the other Parties for resolution of the dispute through negotiations, either Party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration, in accordance with its Arbitration Rules. The arbitration shall be conducted in Shanghai. The arbitration award shall be final and binding on all Parties. Subject to the provisions of the laws of China, the arbitrator may impose restrictions and/or dispose of Party's C equity interests or land and other assets (such as for award of remedies), grant injunction (such as for the conduct of business or compelling the transfer of assets), or grant other interim relief, or order winding up of Party C through arbitration. Parties agree that subject to the provisions of the laws of China, pending the formation of arbitration tribunal or in appropriate cases, the courts with jurisdiction (including the courts in Hong Kong, the place of incorporation of the listed company associated with Party A, the place of incorporation of Party C, and the place where the principal assets of listed company associated with Party A or Party C are located) shall have the right to grant interim relief in support of the arbitration. The validity of this Section shall not be subject to any change, cancellation or termination of this Agreement. After arbitration award takes effect, either Party shall have the right to apply to the said courts with jurisdiction for enforcement of the arbitration award.

14.3 Upon the occurrence of any disputes arising from the construction and performance of this Agreement or during the pending arbitration of any dispute, except for the matters under dispute, the Parties to this Agreement shall continue to exercise their respective rights under this Agreement and perform their respective obligations under this Agreement.

15. Notices

15.1 All notices and other communications required or permitted to be given pursuant to this Agreement shall be delivered personally or sent by registered mail, postage prepaid, by a commercial courier service or by facsimile transmission to the address of such party set forth below. A confirmation copy of each notice shall also

be sent by E-mail. The dates on which notices shall be deemed to have been effectively given shall be determined as follows:

15.2 Notices given by personal delivery, by courier service or by registered mail, postage prepaid, shall be deemed effectively given on the date of delivery or refusal at the address specified for notices.

15.3 Notices given by facsimile transmission shall be deemed effectively given on the date of successful transmission (as evidenced by an automatically generated confirmation of transmission).

15.4 For the purpose of notices, the addresses of the Parties are as follows:

Party A: Hangzhou Tuya Information Technology Co., Ltd.
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou
Attn: Liaohan CHEN

Party B: Ruixin ZHOU
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou

Party C: Hangzhou Tuya Technology Co., Ltd.
Address: Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou
Attn: Liaohan CHEN

15.5 Any Party may at any time change its address for notices by a notice delivered to the other Parties in accordance with the terms hereof.

16. Severability

In the event that one or several of the provisions of this Contract are found to be invalid, illegal or unenforceable in any aspect in accordance with any laws or regulations, the validity, legality or enforceability of the remaining provisions of this Contract shall not be affected or compromised in any respect. The Parties shall strive in good faith to replace such invalid, illegal or unenforceable provisions with effective provisions that accomplish to the greatest extent permitted by law and the intentions of the Parties, and the economic effect of such effective provisions shall be as close as possible to the economic effect of those invalid, illegal or unenforceable provisions.

17. Attachments

The attachments set forth herein shall be an integral part of this Agreement.

18. Effectiveness

18.1 This Agreement shall become effective upon execution by the Parties.

18.2 Any amendments, changes and supplements to this Agreement shall be in writing and shall become effective upon completion of the governmental filing procedures (if applicable) after the affixation of the signatures or seals of the Parties. To the extent that it is reasonably practicable and not in violation of the laws of China, the Parties hereto shall modify this Agreement in relation to the laws, regulations or regulatory opinions issued by the regulatory authorities in the place where the controlling shareholder of Party A is listed so that this Agreement meets the relevant requirements, if necessary.

19. Language and Counterparts

This Agreement is written in Chinese and English in four copies. Pledgor, Pledgee and Party C shall hold one copy respectively and the other copy shall be used for registration. The Chinese version and English version shall have equal legal validity.

The Remainder of this page is intentionally left blank

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Equity Interest Pledge Agreement as of the date first above written.

Party A: Hangzhou Tuya Information Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Equity Interest Pledge Agreement as of the date first above written.

Party B: Ruixin ZHOU

By: /s/ Ruixin ZHOU

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Equity Interest Pledge Agreement as of the date first above written.

Party C: Hangzhou Tuya Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Attachments:

I. Shareholders' Register of Party C

2. Exclusive Business Cooperation Agreement

3. Exclusive Option Agreement

4. Power of Attorney

Exhibit 4.8

Second Amended and Restated Equity Interest Pledge Agreement

This Second Amended and Restated Equity Interest Pledge Agreement (this "Agreement") has been executed by and among the following parties on January 19, 2022 in Hangzhou, the People's Republic of China ("China" or the "PRC"):

Party A: Hangzhou Tuya Information Technology Co., Ltd. (formerly Hangzhou Aixiangji Technology Co., Ltd., hereinafter "Pledgee"), a wholly foreign owned enterprise, organized and existing under the laws of the PRC, with its address at Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou;

Party B: Xueji WANG (hereinafter "Pledgor"), a Chinese citizen with Chinese Identification No.: *****; and

Party C: Hangzhou Tuya Technology Co., Ltd., a limited liability company organized and existing under the laws of the PRC, with its address at Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou.

In this Agreement, each of Pledgee, Pledgor and Party C shall be referred to as a "Party" respectively, and they shall be collectively referred to as the "Parties".

Whereas:

1. The Parties are parties who entered into the Equity Interest Pledge Agreement dated as of December 23, 2014 and Amended and Restated Equity Interest Pledge

Agreement dated as of August 23, 2019 (collectively referred to as the "Original Agreement"). The Original Agreement provided that any amendments, modifications and supplements to the Original Agreement shall require the execution of a written agreement by the Parties. The Parties intend to enter into this Agreement in order to amend, restate and replace in its entirety the rights and obligations under in the Original Agreement with the rights and obligations provided in this Agreement. The registration of equity pledge under the Original Agreement which has been completed and remains valid is not subject to the amendment and restatement and continue to be valid. No reregistration is required for the Parties.

2. Pledgor is a citizen of China who as of the date hereof holds 60.69% of equity interests of Party C. Party C is a limited liability company registered in Hangzhou, Zhejiang, China. Party C acknowledges the respective rights and obligations of Pledgor and Pledgee under this Agreement, and intends to provide any necessary assistance in registering the Pledge;

3. Pledgee is a wholly foreign-owned enterprise registered in China. Pledgee and Party C which is partially owned by Pledgor have executed an Exclusive Business Cooperation Agreement (as defined below); Party C, Pledgee and Pledgor have executed an Exclusive Option Agreement (as defined below); Pledgor has executed a Power of Attorney (as defined below) in favor of Pledgee.

4. To ensure that Party C and Pledgor fully perform their obligations under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and the Power of Attorney, Pledgor hereby pledges to the Pledgee all of the equity interest that Pledgor holds in Party C as security for Party C's and Pledgor's obligations under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and the Power of Attorney.

5. To perform the provisions of the Transaction Documents (as defined below), the Parties have mutually agreed to execute this Agreement upon the following terms.

1. Definitions

Unless otherwise provided herein, the terms below shall have the following meanings:

1.1 Pledge: shall refer to the security interest granted by Pledgor to Pledgee pursuant to Section 2 of this Agreement, i.e., the right of Pledgee to be paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest.

1.2 Equity Interest: shall refer to 60.69% equity interests in Party C currently held by Pledgor, and all of the equity interest hereafter acquired by Pledgor in Party C.

1.3 Term of Pledge: shall refer to the term set forth in Section 3 of this Agreement.

1.4 Transaction Documents: shall refer to the Exclusive Business Cooperation Agreement executed by and between Party C and Pledgee on December 23, 2014 and any modifications, amendments and/or restatements thereto (the "Exclusive Business Cooperation Agreement"), the Exclusive Option Agreement executed by and among Pledgor, Party C, and Pledgee on December 23, 2014 and any modifications, amendments and/or restatements thereto (the "Exclusive Option Agreement"), Power of Attorney executed on December 23, 2014 by Pledgor and any modifications, amendments and/or restatements thereto (the "Power of Attorney").

1.5 Contract Obligations: shall refer to all the obligations of Pledgor under the Exclusive Option Agreement, the Power of Attorney and this Agreement; all the obligations of Party C under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and this Agreement.

1.6 Secured Indebtedness: shall refer to all the direct, indirect and derivative losses and losses of anticipated profits, suffered by Pledgee, incurred as a result of any Event of Default. The amount of such loss shall be calculated in accordance with the reasonable business plan and profit forecast of Pledgee, the consulting and service fees payable to Pledgee under the Exclusive Business Cooperation Agreement, all expenses occurred in connection with enforcement by Pledgee of Pledgor's and/or Party C's Contract Obligations and etc.

1.7 Event of Default: shall refer to any of the circumstances set forth in Section 7 of this Agreement.

1.8 Notice of Default: shall refer to the notice issued by Pledgee in accordance with this Agreement declaring an Event of Default.

2. Pledge

2.1 Pledgor agrees to pledge all the Equity Interest as security for performance of the Contract Obligations and payment of the Secured Indebtedness under this Agreement. Party C hereby assents that Pledgor pledges the Equity Interest to the Pledgee pursuant to this Agreement.

2.2 During the term of the Pledge, Pledgee is entitled to receive dividends distributed on the Equity Interest. Pledgor may receive dividends distributed on the Equity Interest only with prior written consent of Pledgee. Dividends received by Pledgor on Equity Interest after deduction of individual income tax paid by Pledgor shall be, as required by Pledgee, (1) deposited into an account designated and supervised by Pledgee and used to secure the Contract Obligations and pay the Secured Indebtedness prior and in preference to make any other payment; or (2) unconditionally donated to Pledgee or any other person designated by Pledgee to the extent permitted under applicable PRC laws.

2.3 Pledgor may subscribe for capital increase in Party C only with prior written consent of Pledgee. Any equity interest obtained by Pledgor as a result of Pledgor's subscription of the increased registered capital of the Company shall also be deemed as Equity Interest.

2.4 In the event that Party C is required by PRC law or upon the written consent by Party A to be liquidated or dissolved, any interest distributed to Pledgor upon Party C's dissolution or liquidation shall, upon the request of the Pledgee, be (1) deposited into an account designate and supervised by Pledgee and used to secure the Contract Obligations and pay the Secured Indebtedness prior and in preference to make any other payment; or (2) unconditionally donated to Pledgee or any other person designated by Pledgee to the extent permitted under applicable PRC laws.

3. Term of Pledge

3.1 The Pledge shall become effective on such date when the pledge of the Equity Interest contemplated herein is registered with relevant administration for industry and commerce (the "AIC"). The Pledge shall remain effective until all Contract Obligations have been fully performed and all Secured Indebtedness have been fully paid. Pledgor and Party C shall (1) register the Pledge in the shareholders' register of Party C within 3 business days following the execution of this Agreement, and (2) submit an application to the AIC for the registration of the Pledge of the Equity Interest contemplated herein within 30 business days following the execution of this Agreement. The parties covenant that for the

purpose of registration of the Pledge, the parties hereto and all other shareholders of Party C shall submit to the AIC this Agreement or an equity interest pledge contract in the form required by the AIC at the location of Party C which shall truly reflect the information of the Pledge hereunder (the "AIC Pledge Contract"). For matters not specified in the AIC Pledge Contract or any discrepancies with this Agreement, the parties shall be bound by the provisions of this Agreement. Pledgor and Party C shall submit all necessary documents and complete all necessary procedures, as required by the PRC laws and regulations and the relevant AIC, to ensure that the Pledge of the Equity Interest shall be registered with the AIC as soon as possible after submission for filing.

3.2 During the Term of Pledge, in the event Pledgor and/or Party C fails to perform the Contract Obligations or pay Secured Indebtedness, Pledgee shall have the right, but not the obligation, to exercise the Pledge in accordance with the provisions of this Agreement.

4. Custody of Records for Equity Interest subject to Pledge

4.1 During the Term of Pledge set forth in this Agreement, Pledgor shall deliver to Pledgee's custody the shareholders' register containing the Pledge within one week from the execution of this Agreement. Pledgee shall have custody of such document during the entire Term of Pledge set forth in this Agreement.

5. Representations and Warranties of Pledgor and Party C

As of the execution date of this Agreement, Pledgor and Party C hereby jointly and severally represent and warrant to Pledgee that:

5.1 Pledgor is the sole legal and beneficial owner of the Equity Interest.

5.2 Pledgee shall have the right to dispose of and transfer the Equity Interest in accordance with the provisions set forth in this Agreement.

5.3 Except for the Pledge, Pledgor has not placed any security interest or other encumbrance on the Equity Interest.

5.4 Pledgor and Party C have obtained any and all approvals and consents from applicable government authorities and third parties (if required) for execution, delivery and performance of this Agreement.

5.5 The execution, delivery and performance of this Agreement will not: (i) violate any relevant PRC laws (except for Section 14.2 of this Agreement); (ii) conflict with Party C's articles of association or other constitutional documents; (iii) result in any breach of or constitute any default under any contract or instrument to which it is a party or by which it is otherwise bound; (iv) result in any violation of any condition for the grant and/or maintenance of any permit or approval granted to any Party; or (v) cause any permit or approval granted to any Party to be suspended, cancelled or attached with additional conditions.

6. Covenants of Pledgor and Party C

6.1 During the term of this Agreement, Pledgor and Party C hereby jointly and severally covenant to the Pledgee:

6.1.1 Pledgor shall not transfer the Equity Interest, place or permit the existence of any security interest or other encumbrance on the Equity Interest or any portion thereof, without the prior written consent of Pledgee, except for the performance of the Transaction Documents;

6.1.2 Pledgor and Party C shall comply with the provisions of all laws and regulations applicable to the pledge of rights, and within five (5) days of receipt of any notice, order or recommendation issued or prepared by relevant competent authorities regarding the Pledge, shall present the aforementioned notice, order or recommendation to Pledgee, and shall comply with the aforementioned notice, order or recommendation or submit objections and representations with respect to the aforementioned matters upon Pledgee's reasonable request or upon consent of Pledgee;

6.1.3 Pledgor and Party C shall promptly notify Pledgee of any event or notice received by Pledgor that may have an impact on the Equity Interest or any portion thereof, as well as any event or notice received by Pledgor that may have an impact on any guarantees and other obligations of Pledgor arising out of this Agreement.

6.1.4 Party C shall complete the registration procedures for extension of the term of operation within three (3) months prior to the expiration of such term to maintain the validity of this Agreement.

6.2 Pledgor agrees that the rights acquired by Pledgee in accordance with this Agreement with respect to the Pledge shall not be interrupted or harmed by Pledgor or any heirs or representatives of Pledgor or any other persons through any legal proceedings. Any heirs or representatives of the Pledgor shall cooperate with the other Parties to this Agreement to make all necessary arrangements and sign all necessary documents, ensuring the fulfillment of this Agreement will not be harmed or prevented by these heirs or representatives.

6.3 To protect or perfect the security interest granted by this Agreement for the Contract Obligations and Secured Indebtedness, Pledgor hereby undertakes to execute in good faith and to cause other parties who have an interest in the Pledge to execute all certificates, agreements, deeds and/or covenants required by Pledgee. Pledgor also undertakes to perform and to cause other parties who have an interest in the Pledge to perform actions required by Pledgee, to facilitate the exercise by Pledgee of its rights and authority granted thereto by this Agreement, and to enter into all relevant documents regarding ownership of Equity Interest with Pledgee or designee(s) of Pledgee (natural persons/legal persons). Pledgor undertakes to provide Pledgee within a reasonable time with all notices, orders and decisions regarding the Pledge that are required by Pledgee.

6.4 Pledgor hereby undertakes to comply with and perform all guarantees, promises, agreements, representations and conditions under this Agreement. In the event of failure or partial performance of its guarantees, promises, agreements, representations and conditions, Pledgor shall indemnify Pledgee for all losses resulting therefrom.

7. Event of Breach

7.1 The following circumstances shall be deemed Event of Default:

7.1.1 Pledgor's any breach to any representations, warranties or obligations under the Transaction Documents and/or this Agreement;

7.1.2 Party C's any breach to any representations, warranties or obligations under the Transaction Documents and/or this Agreement;

7.1.3 Any or various obligation(s) of Party B or Party C under the Transaction Documents and/or this Agreement is/are treated as illegal or void transaction.

7.2 Upon notice or discovery of the occurrence of any circumstances or event that may lead to the aforementioned circumstances described in Section 7.1, Pledgor and Party C shall immediately notify Pledgee in writing accordingly.

7.3 Unless an Event of Default set forth in this Section 7.1 has been successfully resolved to Pledgee's satisfaction within twenty (20) days after the Pledgee and /or Party C delivers a notice to the Pledgor requesting ratification of such Event of Default, Pledgee may issue a Notice of Default to Pledgor in writing at any time thereafter, demanding the Pledgor to immediately exercise the Pledge in accordance with the provisions of Section 8 of this Agreement.

8. Exercise of Pledge

8.1 Pledgee shall issue a written Notice of Default to Pledgor when it exercises the Pledge.

8.2 Subject to the provisions of Section 7.3, Pledgee may exercise the right to enforce the Pledge at any time after the issuance of the Notice of Default in accordance with Section 8.1. Once Pledgee elects to enforce the Pledge, Pledgor shall cease to be entitled to any rights or interests associated with the Equity Interest.

8.3 After Pledgee issues a Notice of Default to Pledgor in accordance with Section 8.1, Pledgee may exercise any remedy measure under applicable PRC laws, the Transaction Documents and this Agreement, including but not limited to being paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest. The Pledgee shall not be liable for any loss incurred by its duly exercise of such rights and powers.

8.4 The proceeds from exercise of the Pledge by Pledgee shall be used to pay for tax and expenses incurred as result of disposing the Equity Interest and to perform Contract Obligations and pay the Secured Indebtedness to the Pledgee prior and in preference to any other payment. After the payment of the aforementioned amounts, the remaining balance shall be returned to Pledgor or any other person who have rights to such balance under applicable laws or be deposited to the local notary public office where Pledgor resides, with all expense incurred being borne by Pledgor. To the extent permitted under applicable PRC laws, Pledgor shall unconditionally donate the aforementioned proceeds to Pledgee or any other person designated by Pledgee.

8.5 Pledgee may exercise any remedy measure available simultaneously or in any order. Pledgee may exercise the right to being paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest under this Agreement, without exercising any other remedy measure first.

8.6 Pledgee is entitled to designate an attorney or other representatives to exercise the Pledge on its behalf, and Pledgor or Party C shall not raise any objection to such exercise.

8.7 When Pledgee disposes of the Pledge in accordance with this Agreement, Pledgor and Party C shall provide necessary assistance to enable Pledgee to enforce the Pledge in accordance with this Agreement.

9. Breach of Agreement

9.1 If Pledgor or Party C conducts any material breach of any term of this Agreement, Pledgee shall have right to terminate this Agreement and/or require Pledgor or Party C to indemnify all damages; this Section 9 shall not prejudice any other rights of Pledgee herein;

9.2 Pledgor or Party C shall not have any right to terminate this Agreement in any event unless otherwise required by applicable laws.

10. Assignment

10.1 Without Pledgee's prior written consent, Pledgor and Party C shall not have the right to assign or delegate their rights and obligations under this Agreement.

10.2 This Agreement shall be binding on Pledgor and his/her successors and permitted assigns, and shall be valid with respect to Pledgee and each of his/her successors and assigns.

10.3 At any time, Pledgee may assign any and all of its rights and obligations under the Transaction Documents and this Agreement to its designee(s), in which case the assigns shall have the rights and obligations of Pledgee under the Transaction Documents and this Agreement, as if it were the original party to the Transaction Documents and this Agreement.

10.4 In the event of change of Pledgee due to assignment, Pledgor and/or Party C shall, at the request of Pledgee, execute a new pledge agreement with the new pledgee on the same terms and conditions as this Agreement, and register the same with the relevant AIC.

10.5 Pledgor and Party C shall strictly abide by the provisions of this Agreement and other contracts jointly or separately executed by the Parties hereto or any of them, including the Transaction Documents, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof. Any remaining rights of Pledgor with respect to the Equity Interest pledged hereunder shall not be exercised by Pledgor except in accordance with the written instructions of Pledgee.

11. Termination

11.1 Upon the fulfillment of all Contract Obligations and the full payment of all Secured Indebtedness by Pledgor and Party C, Pledgee shall release the Pledge under this Agreement upon Pledgor's request as soon as reasonably practicable and shall assist Pledgor to de-register the Pledge from the shareholders' register of Party C and with relevant PRC local administration for industry and commerce. Pledgee acknowledges that, once Pledgee can hold Party C's equity interest directly and Party C can continue to undertake its business legally or Pledgee can undertake Party C's business legally pursuant to the PRC laws and regulatory policy, Pledgee will exercise the Equity Purchase Option under the Exclusive Option Agreement or the Asset Purchase Option in Section 1.5 thereof as soon as possible, so that Pledgee can operate Party C's business directly or hold Party C's equity directly. For the avoidance of doubt, this acknowledgement is made by Pledgee to meet the requirements of the regulatory authorities in the place where the controlling shareholder of Party A is listed, and Pledgor and Party C shall not assert any claims and rights against Pledgee thereupon. In addition, in this case, the Parties shall adopt reasonable measures to assist with the termination of the Transaction Documents.

11.2 The provisions under Sections 9, 13, 14 and 11.2 herein of this Agreement shall survive the expiration or termination of this Agreement.

12. Handling Fees and Other Expenses

All fees and out of pocket expenses relating to this Agreement, including but not limited to legal costs, costs of production, stamp tax and any other taxes and fees, shall be borne by Party C.

13. Confidentiality

The Parties acknowledge that the existence and the terms of this Agreement and any oral or written information exchanged between the Parties in connection with the preparation and performance this Agreement are regarded as confidential information. Each Party shall maintain confidentiality of all such confidential information, and without obtaining the written consent of the other Party, it shall not disclose any relevant confidential information to any third parties, except for the information that: (a) is or will be in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, rules of any stock exchange, or orders of the court or other government authorities; or (c) is required to be disclosed by any Party to its shareholders, directors, employees, legal counsels or financial advisors regarding the transaction contemplated hereunder, provided that such shareholders, directors, employees, legal counsels or financial advisors shall be bound by the confidentiality obligations similar to those set forth in this Section. Disclosure of any confidential information by the shareholders, director, employees of or agencies engaged by any Party shall be deemed disclosure of such confidential information by such Party and such Party shall be held liable for breach of this Agreement.

14. Governing Law and Resolution of Disputes

14.1 The execution, effectiveness, construction, performance, amendment and termination of this Agreement and the resolution of disputes hereunder shall be governed by the laws of China.

14.2 In the event of any dispute with respect to the construction and performance of this Agreement, the Parties shall first resolve the dispute through friendly negotiations. In the event the Parties fail to reach an agreement on the dispute within 30 days after either Party's request to the other Parties for resolution of the dispute through negotiations, either Party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration, in accordance with its Arbitration Rules. The arbitration shall be conducted in Shanghai. The arbitration award shall be final and binding on all Parties. Subject to the provisions of the laws of China, the arbitrator may impose restrictions and/or dispose of Party's C equity interests or land and other assets (such as for award of remedies), grant injunction (such as for the conduct of business or compelling the transfer of assets), or grant other interim relief, or order winding up of Party C through arbitration. Parties agree that subject to the provisions of the laws of China, pending the formation of arbitration tribunal or in appropriate cases, the courts with jurisdiction (including the courts in Hong Kong, the place of incorporation of the listed company associated with Party A, the place of incorporation of Party C, and the place where the principal assets of listed company associated with Party A or Party C are located) shall have the right to grant interim relief in support of the arbitration. The validity of this Section shall not be subject to any change, cancellation or termination of this Agreement. After arbitration award takes effect, either Party shall have the right to apply to the said courts with jurisdiction for enforcement of the arbitration award.

14.3 Upon the occurrence of any disputes arising from the construction and performance of this Agreement or during the pending arbitration of any dispute, except for the matters under dispute, the Parties to this Agreement shall continue to exercise their respective rights under this Agreement and perform their respective obligations under this Agreement.

15. Notices

15.1 All notices and other communications required or permitted to be given pursuant to this Agreement shall be delivered personally or sent by registered mail, postage prepaid, by a commercial courier service or by facsimile transmission to the address of such party set forth below. A confirmation copy of each notice shall also be sent by E-mail. The dates on which notices shall be deemed to have been effectively given shall be determined as follows:

15.2 Notices given by personal delivery, by courier service or by registered mail, postage prepaid, shall be deemed effectively given on the date of delivery or refusal at the address specified for notices.

15.3 Notices given by facsimile transmission shall be deemed effectively given on the date of successful transmission (as evidenced by an automatically generated confirmation of transmission).

15.4 For the purpose of notices, the addresses of the Parties are as follows:

Party A: Hangzhou Tuya Information Technology Co., Ltd.

Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou

Attn: Liaohan CHEN

Party B: Xueji WANG
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou

Party C: Hangzhou Tuya Technology Co., Ltd.
Address: Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou
Attn: Liaohan CHEN

15.5 Any Party may at any time change its address for notices by a notice delivered to the other Parties in accordance with the terms hereof.

16. Severability

In the event that one or several of the provisions of this Contract are found to be invalid, illegal or unenforceable in any aspect in accordance with any laws or regulations, the validity, legality or enforceability of the remaining provisions of this Contract shall not be affected or compromised in any respect. The Parties shall strive in good faith to replace such invalid, illegal or unenforceable provisions with effective provisions that accomplish to the greatest extent permitted by law and the intentions of the Parties, and the economic effect of such effective provisions shall be as close as possible to the economic effect of those invalid, illegal or unenforceable provisions.

17. Attachments

The attachments set forth herein shall be an integral part of this Agreement.

18. Effectiveness

18.1 This Agreement shall become effective upon execution by the Parties.

18.2 Any amendments, changes and supplements to this Agreement shall be in writing and shall become effective upon completion of the governmental filing procedures (if applicable) after the affixation of the signatures or seals of the Parties. To the extent that it is reasonably practicable and not in violation of the laws of China, the Parties hereto shall modify this Agreement in relation to the laws, regulations or regulatory opinions issued by the regulatory authorities in the place where the controlling shareholder of Party A is listed so that this Agreement meets the relevant requirements, if necessary.

19. Language and Counterparts

This Agreement is written in Chinese and English in four copies. Pledgor, Pledgee and Party C shall hold one copy respectively and the other copy shall be used for registration. The Chinese version and English version shall have equal legal validity.

The Remainder of this page is intentionally left blank

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Second Amended and Restated Equity Interest Pledge Agreements as of the first above written.

Party A: Hangzhou Tuya Information Technology Co., Ltd.
By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Second Amended and Restated Equity Interest Pledge Agreements as of the first above written.

Party B: Xueji WANG
By: /s/ Xueji WANG

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Second Amended and Restated Equity Interest Pledge Agreements as of the first above written.

Party C: Hangzhou Tuya Technology Co., Ltd.
By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Attachements:

1. Shareholders' Register of Party C
2. Executive Business Cooperation Agreement
3. Exclusive Option Agreement
4. Power of Attorney

Exhibit 4.9

Amended and Restated Equity Interest Pledge Agreement

This Amended and Restated Equity Interest Pledge Agreement (this "Agreement") has been executed by and among the following parties on January 19, 2022 in Hangzhou, the People's Republic of China ("China" or the "PRC"):

Party A: Hangzhou Tuya Information Technology Co., Ltd. (formerly Hangzhou Aixiangji Technology Co., Ltd., hereinafter "Pledgee"), a wholly foreign owned enterprise, organized and existing under the laws of the PRC, with its address at Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou;

Party B: Yaona LIN (hereinafter "Pledgor"), a Chinese citizen with Chinese Identification No.: *****; and

Party C: Hangzhou Tuya Technology Co., Ltd., a limited liability company organized and existing under the laws of the PRC, with its address at Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou.

In this Agreement, each of Pledgee, Pledgor and Party C shall be referred to as a "Party" respectively, and they shall be collectively referred to as the "Parties".

Whereas:

1. The Parties are parties who entered into the Equity Interest Pledge Agreement dated December 23, 2014 (the "Original Agreement"). The Original Agreement provided that any amendments, modifications and supplements to the Original Agreement shall

require the execution of a written agreement by the Parties. The Parties intend to enter into this Agreement in order to amend, restate and replace in its entirety the rights and obligations under in the Original Agreement with the rights and obligations provided in this Agreement. The registration of equity pledge under the Original Agreement which has been completed and remains valid is not subject to the amendment and restatement and continue to be valid. No re-registration is required for the Parties.

2. Pledgor is a citizen of China who as of the date hereof holds 11.47% of equity interests of Party C. Party C is a limited liability company registered in Hangzhou, Zhejiang, China. Party C acknowledges the respective rights and obligations of Pledgor and Pledgee under this Agreement, and intends to provide any necessary assistance in registering the Pledge;

3. Pledgee is a wholly foreign-owned enterprise registered in China. Pledgee and Party C which is partially owned by Pledgor have executed an Exclusive Business Cooperation Agreement (as defined below); Party C, Pledgee and Pledgor have executed an Exclusive Option Agreement (as defined below); Pledgor has executed a Power of Attorney (as defined below) in favor of Pledgee.

4. To ensure that Party C and Pledgor fully perform their obligations under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and the Power of Attorney, Pledgor hereby pledges to the Pledgee all of the equity interest that Pledgor holds in Party C as security for Party C's and Pledgor's obligations under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and the Power of Attorney.

5. To perform the provisions of the Transaction Documents (as defined below), the Parties have mutually agreed to execute this Agreement upon the following terms.

1. Definitions

Unless otherwise provided herein, the terms below shall have the following meanings:

1.1 Pledge: shall refer to the security interest granted by Pledgor to Pledgee pursuant to Section 2 of this Agreement, i.e., the right of Pledgee to be paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest.

1.2 Equity Interest: shall refer to 11.47% equity interests in Party C currently held by Pledgor, and all of the equity interest hereafter acquired by Pledgor in Party C.

1.3 Term of Pledge: shall refer to the term set forth in Section 3 of this Agreement.

1.4 Transaction Documents: shall refer to the Exclusive Business Cooperation Agreement executed by and between Party C and Pledgee on December 23, 2014 and any modifications, amendments and/or restatements thereto (the "Exclusive Business Cooperation Agreement"), the Exclusive Option Agreement executed by and among Pledgor, Party C, and Pledgee on December 23, 2014 and any modifications, amendments and/or restatements thereto (the "Exclusive Option Agreement"), Power of Attorney executed on December 23, 2014 by Pledgor and any modifications, amendments and/or restatements thereto (the "Power of Attorney").

1.5 Contract Obligations: shall refer to all the obligations of Pledgor under the Exclusive Option Agreement, the Power of Attorney and this Agreement; all the obligations of Party C under the Exclusive Business Cooperation Agreement, the Exclusive Option Agreement and this Agreement.

1.6 Secured Indebtedness: shall refer to all the direct, indirect and derivative losses and losses of anticipated profits, suffered by Pledgee, incurred as a result of any Event of Default. The amount of such loss shall be calculated in accordance with the reasonable business plan and profit forecast of Pledgee, the consulting and service fees payable to Pledgee under the Exclusive Business Cooperation Agreement, all expenses occurred in connection with enforcement by Pledgee of Pledgor's and/or Party C's Contract Obligations and etc.

1.7 Event of Default: shall refer to any of the circumstances set forth in Section 7 of this Agreement.

1.8 Notice of Default: shall refer to the notice issued by Pledgee in accordance with this Agreement declaring an Event of Default.

2. Pledge

2.1 Pledgor agrees to pledge all the Equity Interest as security for performance of the Contract Obligations and payment of the Secured Indebtedness under this Agreement. Party C hereby assents that Pledgor pledges the Equity Interest to the Pledgee pursuant to this Agreement.

2.2 During the term of the Pledge, Pledgee is entitled to receive dividends distributed on the Equity Interest. Pledgor may receive dividends distributed on the Equity Interest only with prior written consent of Pledgee. Dividends received by Pledgor on Equity Interest after deduction of individual income tax paid by Pledgor shall be, as required by Pledgee, (1) deposited into an account designated and supervised by Pledgee and used to secure the Contract Obligations and pay the Secured Indebtedness prior and in preference to make any other payment; or (2) unconditionally donated to Pledgee or any other person designated by Pledgee to the extent permitted under applicable PRC laws.

2.3 Pledgor may subscribe for capital increase in Party C only with prior written consent of Pledgee. Any equity interest obtained by Pledgor as a result of Pledgor's subscription of the increased registered capital of the Company shall also be deemed as Equity Interest.

2.4 In the event that Party C is required by PRC law or upon the written consent by Party A to be liquidated or dissolved, any interest distributed to Pledgor upon Party C's dissolution or liquidation shall, upon the request of the Pledgee, be (1) deposited into an account designate and supervised by Pledgee and used to secure the Contract Obligations and pay the Secured Indebtedness prior and in preference to make any other payment; or (2) unconditionally donated to Pledgee or any other person designated by Pledgee to the extent permitted under applicable PRC laws.

3. Term of Pledge

3.1 The Pledge shall become effective on such date when the pledge of the Equity Interest contemplated herein is registered with relevant administration for industry and commerce (the "AIC"). The Pledge shall remain effective until all Contract Obligations have been fully performed and all Secured Indebtedness have been fully paid. Pledgor and Party C shall (1) register the Pledge in the shareholders' register of Party C within 3 business days following the execution of this Agreement, and (2) submit an application to the AIC for the registration of the Pledge of the Equity Interest contemplated herein within 30 business days following the execution of this Agreement. The parties covenant that for the purpose of registration of the Pledge, the parties hereto and all other shareholders of Party C shall submit to the AIC this Agreement or an equity interest pledge

contract in the form required by the AIC at the location of Party C which shall truly reflect the information of the Pledge hereunder (the "AIC Pledge Contract"). For matters not specified in the AIC Pledge Contract or any discrepancies with this Agreement, the parties shall be bound by the provisions of this Agreement. Pledgor and Party C shall submit all necessary documents and complete all necessary procedures, as required by the PRC laws and regulations and the relevant AIC, to ensure that the Pledge of the Equity Interest shall be registered with the AIC as soon as possible after submission for filing.

3.2 During the Term of Pledge, in the event Pledgor and/or Party C fails to perform the Contract Obligations or pay Secured Indebtedness, Pledgee shall have the right, but not the obligation, to exercise the Pledge in accordance with the provisions of this Agreement.

4. Custody of Records for Equity Interest subject to Pledge

4.1 During the Term of Pledge set forth in this Agreement, Pledgor shall deliver to Pledgee's custody the shareholders' register containing the Pledge within one week from the execution of this Agreement. Pledgee shall have custody of such document during the entire Term of Pledge set forth in this Agreement.

5. Representations and Warranties of Pledgor and Party C

As of the execution date of this Agreement, Pledgor and Party C hereby jointly and severally represent and warrant to Pledgee that:

5.1 Pledgor is the sole legal and beneficial owner of the Equity Interest.

5.2 Pledgee shall have the right to dispose of and transfer the Equity Interest in accordance with the provisions set forth in this Agreement.

5.3 Except for the Pledge, Pledgor has not placed any security interest or other encumbrance on the Equity Interest.

5.4 Pledgor and Party C have obtained any and all approvals and consents from applicable government authorities and third parties (if required) for execution, delivery and performance of this Agreement.

5.5 The execution, delivery and performance of this Agreement will not: (i) violate any relevant PRC laws (except for Section 14.2 of this Agreement); (ii) conflict with Party C's articles of association or other constitutional documents; (iii) result in any breach of or constitute any default under any contract or instrument to which it is a party or by which it is otherwise bound; (iv) result in any violation of any condition for the grant and/or maintenance of any permit or approval granted to any Party; or (v) cause any permit or approval granted to any Party to be suspended, cancelled or attached with additional conditions.

6. Covenants of Pledgor and Party C

6.1 During the term of this Agreement, Pledgor and Party C hereby jointly and severally covenant to the Pledgee:

6.1.1 Pledgor shall not transfer the Equity Interest, place or permit the existence of any security interest or other encumbrance on the Equity Interest or any portion thereof, without the prior written consent of Pledgee, except for the performance of the Transaction Documents;

6.1.2 Pledgor and Party C shall comply with the provisions of all laws and regulations applicable to the pledge of rights, and within five (5) days of

receipt of any notice, order or recommendation issued or prepared by relevant competent authorities regarding the Pledge, shall present the aforementioned notice, order or recommendation to Pledgee, and shall comply with the aforementioned notice, order or recommendation or submit objections and representations with respect to the aforementioned matters upon Pledgee's reasonable request or upon consent of Pledgee;

6.1.3 Pledgor and Party C shall promptly notify Pledgee of any event or notice received by Pledgor that may have an impact on the Equity Interest or any portion thereof, as well as any event or notice received by Pledgor that may have an impact on any guarantees and other obligations of Pledgor arising out of this Agreement.

6.1.4 Party C shall complete the registration procedures for extension of the term of operation within three (3) months prior to the expiration of such term to maintain the validity of this Agreement.

6.2 Pledgor agrees that the rights acquired by Pledgee in accordance with this Agreement with respect to the Pledge shall not be interrupted or harmed by Pledgor or any heirs or representatives of Pledgor or any other persons through any legal proceedings. Any heirs or representatives of the Pledgor shall cooperate with the other Parties to this Agreement to make all necessary arrangements and sign all necessary documents, ensuring the fulfillment of this Agreement will not be harmed or prevented by these heirs or representatives.

6.3 To protect or perfect the security interest granted by this Agreement for the Contract Obligations and Secured Indebtedness, Pledgor hereby undertakes to execute in good faith and to cause other parties who have an interest in the Pledge to execute all certificates, agreements, deeds and/or covenants required by Pledgee. Pledgor also undertakes to perform and to cause other parties who have an interest in the Pledge to perform actions required by Pledgee, to facilitate the exercise by Pledgee of its rights and authority granted thereto by this Agreement, and to enter into all relevant documents regarding ownership of Equity Interest with Pledgee or designee(s) of Pledgee (natural persons/legal persons). Pledgor undertakes to provide Pledgee within a reasonable time with all notices, orders and decisions regarding the Pledge that are required by Pledgee.

6.4 Pledgor hereby undertakes to comply with and perform all guarantees, promises, agreements, representations and conditions under this Agreement. In the event of failure or partial performance of its guarantees, promises, agreements, representations and conditions, Pledgor shall indemnify Pledgee for all losses resulting therefrom.

7. Event of Breach

7.1 The following circumstances shall be deemed Event of Default:

7.1.1 Pledgor's any breach to any representations, warranties or obligations under the Transaction Documents and/or this Agreement;

7.1.2 Party C's any breach to any representations, warranties or obligations under the Transaction Documents and/or this Agreement;

7.1.3 Any or various obligation(s) of Party B or Party C under the Transaction Documents and/or this Agreement is/are treated as illegal or void transaction.

7.2 Upon notice or discovery of the occurrence of any circumstances or event that may lead to the aforementioned circumstances described in Section 7.1, Pledgor and Party C shall immediately notify Pledgee in writing accordingly.

7.3 Unless an Event of Default set forth in this Section 7.1 has been successfully resolved to Pledgee's satisfaction within twenty (20) days after the Pledgee and /or Party C delivers a notice to the Pledgor requesting ratification of such Event of Default, Pledgee may issue a Notice of Default to Pledgor in writing at any time thereafter, demanding the Pledgor to immediately exercise the Pledge in accordance with the provisions of Section 8 of this Agreement.

8. Exercise of Pledge

8.1 Pledgee shall issue a written Notice of Default to Pledgor when it exercises the Pledge.

8.2 Subject to the provisions of Section 7.3, Pledgee may exercise the right to enforce the Pledge at any time after the issuance of the Notice of Default in accordance with Section 8.1. Once Pledgee elects to enforce the Pledge, Pledgor shall cease to be entitled to any rights or interests associated with the Equity Interest.

8.3 After Pledgee issues a Notice of Default to Pledgor in accordance with Section 8.1, Pledgee may exercise any remedy measure under applicable PRC laws, the Transaction Documents and this Agreement, including but not limited to being paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest. The Pledgee shall not be liable for any loss incurred by its duly exercise of such rights and powers.

8.4 The proceeds from exercise of the Pledge by Pledgee shall be used to pay for tax and expenses incurred as result of disposing the Equity Interest and to perform Contract Obligations and pay the Secured Indebtedness to the Pledgee prior and in preference to any other payment. After the payment of the aforementioned amounts, the remaining balance shall be returned to Pledgor or any other person who have rights to such balance under applicable laws or be deposited to the local notary public office where Pledgor resides, with all expense incurred being borne by Pledgor. To the extent permitted under applicable PRC laws, Pledgor shall unconditionally donate the aforementioned proceeds to Pledgee or any other person designated by Pledgee.

8.5 Pledgee may exercise any remedy measure available simultaneously or in any order. Pledgee may exercise the right to being paid in priority with the Equity Interest based on the monetary valuation that such Equity Interest is converted into or from the proceeds from auction or sale of the Equity Interest under this Agreement, without exercising any other remedy measure first.

8.6 Pledgee is entitled to designate an attorney or other representatives to exercise the Pledge on its behalf, and Pledgor or Party C shall not raise any objection to such exercise.

8.7 When Pledgee disposes of the Pledge in accordance with this Agreement, Pledgor and Party C shall provide necessary assistance to enable Pledgee to enforce the Pledge in accordance with this Agreement.

9. Breach of Agreement

9.1 If Pledgor or Party C conducts any material breach of any term of this Agreement, Pledgee shall have right to terminate this Agreement and/or require Pledgor or

Party C to indemnify all damages; this Section 9 shall not prejudice any other rights of Pledgee herein;

9.2 Pledgor or Party C shall not have any right to terminate this Agreement in any event unless otherwise required by applicable laws.

10. Assignment

10.1 Without Pledgee's prior written consent, Pledgor and Party C shall not have the right to assign or delegate their rights and obligations under this Agreement.

10.2 This Agreement shall be binding on Pledgor and his/her successors and permitted assigns, and shall be valid with respect to Pledgee and each of his/her successors and assigns.

10.3 At any time, Pledgee may assign any and all of its rights and obligations under the Transaction Documents and this Agreement to its designee(s), in which case the assigns shall have the rights and obligations of Pledgee under the Transaction Documents and this Agreement, as if it were the original party to the Transaction Documents and this Agreement.

10.4 In the event of change of Pledgee due to assignment, Pledgor and/or Party C shall, at the request of Pledgee, execute a new pledge agreement with the new pledgee on the same terms and conditions as this Agreement, and register the same with the relevant AIC.

10.5 Pledgor and Party C shall strictly abide by the provisions of this Agreement and other contracts jointly or separately executed by the Parties hereto or any of them, including the Transaction Documents, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof. Any remaining rights of Pledgor with respect to the Equity Interest pledged hereunder shall not be exercised by Pledgor except in accordance with the written instructions of Pledgee.

11. Termination

11.1 Upon the fulfillment of all Contract Obligations and the full payment of all Secured Indebtedness by Pledgor and Party C, Pledgee shall release the Pledge under this Agreement upon Pledgor's request as soon as reasonably practicable and shall assist Pledgor to de-register the Pledge from the shareholders' register of Party C and with relevant PRC local administration for industry and commerce. Pledgee acknowledges that, once Pledgee can hold Party C's equity interest directly and Party C can continue to undertake its business legally or Pledgee can undertake Party C's business legally pursuant to the PRC laws and regulatory policy, Pledgee will exercise the Equity Purchase Option under the Exclusive Option Agreement or the Asset Purchase Option in Section 1.5 thereof as soon as possible, so that Pledgee can operate Party C's business directly or hold Party C's equity directly. For the avoidance of doubt, this acknowledgement is made by Pledgee to meet the requirements of the regulatory authorities in the place where the controlling shareholder of Party A is listed, and Pledgor and Party C shall not assert any claims and rights against Pledgee thereupon. In addition, in this case, the Parties shall adopt reasonable measures to assist with the termination of the Transaction Documents.

11.2 The provisions under Sections 9, 13, 14 and 11.2 herein of this Agreement shall survive the expiration or termination of this Agreement.

12. Handling Fees and Other Expenses

All fees and out of pocket expenses relating to this Agreement, including but not limited to legal costs, costs of production, stamp tax and any other taxes and fees, shall be borne by Party C.

13. Confidentiality

The Parties acknowledge that the existence and the terms of this Agreement and any oral or written information exchanged between the Parties in connection with the preparation and performance this Agreement are regarded as confidential information. Each Party shall maintain confidentiality of all such confidential information, and without obtaining the written consent of the other Party, it shall not disclose any relevant confidential information to any third parties, except for the information that: (a) is or will be in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, rules of any stock exchange, or orders of the court or other government authorities; or (c) is required to be disclosed by any Party to its shareholders, directors, employees, legal counsels or financial advisors regarding the transaction contemplated hereunder, provided that such shareholders, directors, employees, legal counsels or financial advisors shall be bound by the confidentiality obligations similar to those set forth in this Section. Disclosure of any confidential information by the shareholders, director, employees of or agencies engaged by any Party shall be deemed disclosure of such confidential information by such Party and such Party shall be held liable for breach of this Agreement.

14. Governing Law and Resolution of Disputes

14.1 The execution, effectiveness, construction, performance, amendment and termination of this Agreement and the resolution of disputes hereunder shall be governed by the laws of China.

14.2 In the event of any dispute with respect to the construction and performance of this Agreement, the Parties shall first resolve the dispute through friendly negotiations. In the event the Parties fail to reach an agreement on the dispute within 30 days after either Party's request to the other Parties for resolution of the dispute through negotiations, either Party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration, in accordance with its Arbitration Rules. The arbitration shall be conducted in Shanghai. The arbitration award shall be final and binding on all Parties. Subject to the provisions of the laws of China, the arbitrator may impose restrictions and/or dispose of Party's C equity interests or land and other assets (such as for award of remedies), grant injunction (such as for the conduct of business or compelling the transfer of assets), or grant other interim relief, or order winding up of Party C through arbitration. Parties agree that subject to the provisions of the laws of China, pending the formation of arbitration tribunal or in appropriate cases, the courts with jurisdiction (including the courts in Hong Kong, the place of incorporation of the listed company associated with Party A, the place of incorporation of Party C, and the place where the principal assets of listed company associated with Party A or Party C are located) shall have the right to grant interim relief in support of the arbitration. The validity of this Section shall not be subject to any change, cancellation or termination of this Agreement. After arbitration award takes effect, either Party shall have the right to apply to the said courts with jurisdiction for enforcement of the arbitration award.

14.3 Upon the occurrence of any disputes arising from the construction and performance of this Agreement or during the pending arbitration of any dispute, except for the matters under dispute, the Parties to this Agreement shall continue to exercise their respective rights under this Agreement and perform their respective obligations under this Agreement.

15. Notices

15.1 All notices and other communications required or permitted to be given pursuant to this Agreement shall be delivered personally or sent by registered mail, postage prepaid, by a commercial courier service or by facsimile transmission to the address of such party set forth below. A confirmation copy of each notice shall also be sent by E-mail. The dates on which notices shall be deemed to have been effectively given shall be determined as follows:

15.2 Notices given by personal delivery, by courier service or by registered mail, postage prepaid, shall be deemed effectively given on the date of delivery or refusal at the address specified for notices.

15.3 Notices given by facsimile transmission shall be deemed effectively given on the date of successful transmission (as evidenced by an automatically generated confirmation of transmission).

15.4 For the purpose of notices, the addresses of the Parties are as follows:

Party A: Hangzhou Tuya Information Technology Co., Ltd.
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou
Attn: Liaohan CHEN

Party B: Yaona LIN
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou

Party C: Hangzhou Tuya Technology Co., Ltd.
Address: Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou
Attn: Liaohan CHEN

15.5 Any Party may at any time change its address for notices by a notice delivered to the other Parties in accordance with the terms hereof.

16. Severability

In the event that one or several of the provisions of this Contract are found to be invalid, illegal or unenforceable in any aspect in accordance with any laws or regulations, the validity, legality or enforceability of the remaining provisions of this Contract shall not be affected or compromised in any respect. The Parties shall strive in good faith to replace such invalid, illegal or unenforceable provisions with effective provisions that accomplish to the greatest extent permitted by law and the intentions of the Parties, and the economic effect of such effective provisions shall be as close as possible to the economic effect of those invalid, illegal or unenforceable provisions.

17. Attachments

The attachments set forth herein shall be an integral part of this Agreement.

18. Effectiveness

18.1 This Agreement shall become effective upon execution by the Parties.

18.2 Any amendments, changes and supplements to this Agreement shall be in writing and shall become effective upon completion of the governmental filing procedures (if applicable) after the affixation of the signatures or seals of the Parties. To the extent that it is reasonably practicable and not in violation of the laws of China, the Parties hereto shall modify this Agreement in relation to the laws, regulations or regulatory opinions issued by the regulatory authorities in the place where the controlling shareholder of Party A is listed so that this Agreement meets the relevant requirements, if necessary.

19. Language and Counterparts

This Agreement is written in Chinese and English in four copies. Pledgor, Pledgee and Party C shall hold one copy respectively and the other copy shall be used for registration. The Chinese version and English version shall have equal legal validity.

The Remainder of this page is intentionally left blank

IN WITNESS WHEREOF.The Parties have caused their authorized representatives to execute this Amended and Restated Equity Interest Pledge Agreement as of the date first above written.

Part A: Hangzhou Tuya Information Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Represntative

IN WITNESS WHEREOF.The Parties have caused their authorized representatives to execute this Amended and Restated Equity Interest Pledge Agreement as of the date first above written.

Part B: Yaona LIN

BY: /s/ Yaona LIN

IN WITNESS WHEREOF.The Parties have caused their authorized representatives to execute this Amended and Restated Equity Interest Pledge Agreement as of the date first above written.

Part C: Hangzhou Tuya Information Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Represntative

Attachments:

I. Shareholders' Register of Party C

2. Exclusive Business Cooperation Agreement

3. Exclusive Option Agreement

4. Power of Attorney

Exhibit 4.10

Amended and Restated Exclusive Business Cooperation Agreement

This amended and restated Exclusive Business Cooperation Agreement (this "Agreement") is made and entered into by and between the following parties on January 19, 2022 in Hangzhou, the People's Republic of China ("China" or the "PRC").

Party A: Hangzhou Tuya Information Technology Co., Ltd. (formerly known as Hangzhou Aixiangji Technology Co., Ltd.)
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou

Party B: Hangzhou Tuya Technology Co., Ltd.
Address: Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou

Each of Party A and Party B shall be hereinafter referred to as a "Party" respectively, and as the "Parties" collectively.

Whereas,

1. The Parties are the parties who entered into the Exclusive Business Cooperation Agreement (hereinafter referred to as the "Original Agreement") dated December 23, 2014. The Original Agreement provided that, the parties should agree in written before any amendment, modifications or supplement was made to the Original Agreement. The Parties intend to enter into this Agreement to amend, restate and replace all the rights and obligations under the Original Agreement with the rights and obligations provided in this Agreement, while any specific agreement signed under the Original Agreement shall remain

effective regardless of this amendment and restatement, and on the occasion of any difference, this Agreement may prevail.

2. Party A is a wholly foreign owned enterprise established in China, and has the necessary resources to provide technical and consulting services;

3. Party B is a company established in China with exclusively domestic capital and is permitted by relevant PRC government authorities to engage in the following business: basic software service, application software service; technology development, consulting, service, transfer and training of computer and software; advertisement design, production, agency and publication (excluding web advertisement); sale of computer, software and ancillary equipments and electronic devices (excluding electronic publication); value- added telecommunication business: software and hardware of computers and its ancillary equipment, electronic products, communication products (excluding those under special government control), smart devices, household appliances, houseware, network equipment, lamps, security products, environmental protection equipment, digital products, sensors, gardening tools, medical devices (Class II only). The businesses conducted by Party B currently and any time during the term of this Agreement are collectively referred to as the "Principal Business";

4. Party A is willing to provide Party B with technical support, consulting services and other services on exclusive basis in relation to the Principal Business during the term of this Agreement, utilizing its advantages in technology, human resources, and information, and Party B is willing to accept such services provided by Party A or Party A's designee(s), each on the terms set forth herein.

Now, therefore, through mutual discussion, the Parties have reached the following agreements:

1. Services Provided by Party A

1.1 Party B hereby appoints Party A as Party B's exclusive services provider to provide Party B with comprehensive technical support, consulting services and other services during the term of this Agreement, in accordance with the terms and conditions of this Agreement, including but not limited to the follows:

(1) Licensing Party B to use any software legally owned by Party A;

(2) Development, maintenance and update of software involved in Party B's business;

(3) Design, installation, daily management, maintenance and updating of network system, hardware and database design;

(4) Technical support and training for employees of Party B;

(5) Assisting Party B in consultancy, collection and research of technology and market information (excluding market research business that wholly foreign-owned enterprises are prohibited from conducting under PRC law);

(6) Providing business management consultation for Party B;

(7) Providing marketing and promotion services for Party B;

(8) Providing customer order management and customer services for Party B;

(9) Leasing of equipments or properties; and

(10) Other services requested by Party B from time to time to the extent permitted under PRC law.

Both Parties understand that the service offered by Party A is limited to the scope of business approved; if Party B demands any service from Party A beyond the scope of business approved, Party A will apply for a larger scope of business to the maximum extent permitted by laws and provide the relevant service after a larger scope of business is approved. In addition, Party A is entitled to suspend or terminate all or part of the service mentioned above to Party B without assuming any legal responsibility if it's in compliance with PRC laws.

1.2 Party B agrees to accept all the services provided by Party A. Party B further agrees that unless with Party A's prior written consent, during the term of this Agreement, Party B shall not directly or indirectly accept the same or any similar services provided by any third party and shall not establish similar corporation relationship with any third party regarding the matters contemplated by this Agreement. Party A may appoint other parties, who may enter into certain agreements described in Section 1.3 with Party B, to provide Party B with the services under this Agreement.

1.3 Service Providing Methodology and Finance Support

1.3.1 Party A and Party B agree that during the term of this Agreement, where necessary, Party B may enter into further service agreements with Party A or any other party designated by Party A, which shall provide the specific contents, manner, personnel, and fees for the specific services.

1.3.2 To fulfill this Agreement, Party A and Party B agree that during the term of this Agreement, where necessary, Party B may enter into equipment or property leases with Party A or any other party designated by Party A which shall permit Party B to use Party A's relevant equipment or property based on the needs of the business of Party B.

1.3.3 Party B hereby grants to Party A an irrevocable and exclusive option to purchase from Party B, at Party A's sole discretion, any or all of the assets and business of Party B, to the extent permitted under PRC law, at the lowest purchase price permitted by PRC law. The Parties shall then enter into a separate assets or business transfer agreement, specifying the terms and conditions of the transfer of the assets.

1.3.4 To ensure that Party B meets the requirement of cash flow in daily operation and/or to offset any losses incurred in the process of its operation, Party A shall, depending on the actual situation, provide Party B with financial support (only to the extent and in a manner permitted by PRC laws). Party A may provide Party B with financial support by way of bank entrusted loans or other appropriate loans, and enter into separate agreements where necessary.

2. **The Calculation and Payment of the Service Fees**

2.1 The fees payable by Party B to Party A during the term of this Agreement shall be calculated as follows:

2.1.1 Party B shall pay service fee to Party A on regular basis. The service fee for each installment shall consist of management fee and fee for services provided, the aggregate amount of which equals to the balances of the total income deducting cost and taxes (excluding enterprise income tax) as well as other fees reserved or withdrawn according to the requirements of laws and regulations, and single management fee and fee for services provided shall be determined by Party A after considering:

(1) Complexity and difficulty of the services provided by Party A;

(2) Title of and time consumed by employees of Party A providing the services;

(3) Contents and value of the services provided by Party A;

(4) Market price of the same type of services;

(5) Operation conditions of the Party B.

2.1.2 If Party A transfers technology to Party B or develops software or other technology as entrusted by Party B or leases equipments or properties to Party B, the technology transfer price, development fees or rent shall be determined by the Parties based on the actual situations.

2.1.3 Party A has the right to summarize the service fee on schedule (the specific period shall be determined by Party A at its own discretion), and send the service fee bill to Party B on a regular basis and notify Party B. Party B shall pay the service fee to the bank account designated by Party A within ten days after receiving such notice. Party B shall fax or mail the copy of the

remittance voucher to Party A within ten days after the remittance.

3. Intellectual Property Rights and Confidentiality Clauses

3.1 Party A shall have exclusive and proprietary ownership, rights and interests in any and all intellectual properties arising out of or created during the performance of this Agreement, including but not limited to copyrights, patents, patent applications, software, technical secrets, trade secrets and others. Party B shall execute all appropriate documents, take all appropriate actions, submit all filings and/or applications, render all appropriate assistance and otherwise conduct whatever is necessary as deemed by Party A at its sole discretion for the purposes of vesting any ownership, right or interest of any such intellectual property rights in Party A, and/or perfecting the protections for any such intellectual property rights in Party A.

3.2 If the development is carried out by Party A based on the intellectual property rights of Party B, Party B must ensure that there are no defects in the intellectual property rights, otherwise Party B shall assume the losses caused to Party A. If Party A hereby assumes the liability for compensation to any third party, after making such compensation, Party A has the right to recover all its losses from Party B.

3.3 The Parties acknowledge that the existence and the terms of this Agreement and any oral or written information exchanged between the Parties in connection with the preparation and performance of this Agreement are regarded as confidential information. Each Party shall maintain confidentiality of all such confidential information, and without obtaining the written consent of the other Party, it shall not disclose any relevant confidential information to any third party, except for the information that: (a) is or will be in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, rules of any stock exchange, or orders of the court or other government authorities; or (c) is required to be disclosed by any Party to its shareholders, directors, employees, legal counsels or financial advisors regarding the transaction contemplated hereunder, provided that such shareholders, directors, employees, legal counsels or financial advisors shall be bound by the confidentiality obligations similar to those set forth in this Section. Disclosure of any confidential information by the shareholders, director, employees of or agencies engaged by any Party shall be deemed disclosure of such confidential information by such Party and such Party shall be held liable for breach of this Agreement.

4. **Representations and Warranties**

4.1 Party A hereby represents, warrants and covenants as follows:

4.1.1 Party A is a wholly foreign owned enterprise legally established and validly existing in accordance with the laws of China; Party A or the service providers designated by Party A will obtain all government permits and licenses for providing the service under this Agreement before providing such services.

4.1.2 Party A has taken all necessary corporate actions, obtained all necessary authorizations as well as all consents and

approvals from third parties and government agencies (if required) for the execution, delivery and performance of this Agreement. Party A's execution, delivery and performance of this Agreement do not violate any explicit requirements under any law or regulation.

4.1.3 Without violating the laws of China, this Agreement constitutes Party A's legal, valid and binding obligations, enforceable against it in accordance with its terms.

4.2 Party B hereby represents, warrants and covenants as follows:

4.2.1 Party B is a company legally established and validly existing in accordance with the laws of China and has obtained and will maintain all permits and licenses for engaging in the Principal Business. In all matters that Party A must engage in to effectively perform its duties and obligations under this Agreement, Party B shall assist and provide Party A with full cooperation and actively cooperate with the services provided by Party A, accept Party A's reasonable opinions and suggestions on Party B's business, and pay the service fees to Party A in full and in time according to the provisions of this Agreement.

4.2.2 Party B has taken all necessary corporate actions, obtained all necessary authorizations as well as all consents and approvals from third parties and government agencies (if required) for the execution, delivery and performance of this Agreement. Party B's execution, delivery and performance of this Agreement do not violate any explicit requirements under any law or regulation.

4.2.3 Without violating the laws of China, this Agreement constitutes Party B's legal, valid and binding obligations, and shall be enforceable against it in accordance with its terms.

5. **Term of Agreement**

5.1 This Agreement shall become effective upon execution by the Parties. Unless terminated in accordance with the provisions of this Agreement or terminated in writing by Party A, this Agreement shall remain effective.

5.2 During the term of this Agreement, each Party shall renew its operation term prior to the expiration thereof so as to enable this Agreement to remain effective. This Agreement shall be terminated upon the expiration of the operation term of a Party if the application for renewal of its operation term is not approved by relevant government authorities.

5.3 The rights and obligations of the Parties under Sections 3, 6, 7 and this Section 5.3 shall survive the termination of this Agreement.

6. **Governing Law and Resolution of Disputes**

6.1 The execution, effectiveness, construction, performance, amendment and termination of this Agreement and the resolution of disputes hereunder shall be governed by the laws of China.

6.2 In the event of any dispute with respect to the construction and performance of this Agreement, the Parties shall first resolve the dispute through friendly negotiations. In the event the Parties fail to reach an agreement on the dispute within 30 days after either Party's request to the other Party for resolution of the dispute through negotiations, either Party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration, in accordance with its arbitration rules. The arbitration shall be conducted in Shanghai. The arbitration award shall be final and binding on both Parties. Subject to the provisions of the laws of China, the arbitrator may impose restrictions on and/or dispose of Party B's equity interests or land and other assets (such as for award of remedies), grant injunction (such as for the conduct of business or compelling the transfer of assets), or grant other interim relief, or order winding up of Party B through arbitration. Both Parties agree that subject to the provisions of the laws of China, pending the formation of the arbitration tribunal or in appropriate cases, the courts with jurisdiction (including the courts in Hong Kong, the place of incorporation of the listed company associated with Party A, the place of incorporation of Party B, and the place where the principal assets of listed company associated with Party A or Party B are located) shall have the right to grant interim relief in support of the arbitration. The validity of this Section shall not be subject to any change, cancellation or termination of this Agreement. After the arbitration award takes effect, either Party shall have the right to apply to the said courts with jurisdiction for enforcement of the arbitration award.

6.3 Upon the occurrence of any disputes arising from the construction and performance of this Agreement or during the pending arbitration of any dispute, except for the matters under dispute, the Parties shall continue to exercise their respective rights under this Agreement and perform their respective obligations under this Agreement.

7. **Breach of Agreement and Indemnification**

7.1 If Party B conducts any material breach of any term of this Agreement, Party A shall have right to terminate this Agreement and/or require Party B to indemnify all damages; this Section 7.1 shall not prejudice any other rights of Party A herein.

7.2 Unless otherwise required by applicable laws, Party B shall not have any right to terminate this Agreement in any event.

7.3 Party B shall indemnify and hold harmless Party A from any losses, injuries, obligations or expenses caused by any lawsuit, claims or other demands against Party A arising from or caused by the services provided by Party A to Party B pursuant this Agreement, except where such losses, injuries, obligations or expenses arise from the gross negligence or willful misconduct of Party A.

8. **Force Majeure**

8.1 In the case of any force majeure events ("Force Majeure") such as earthquake, typhoon, flood, fire, flu, war, strikes or any other events that cannot be predicted and are unpreventable and unavoidable by the affected Party, which directly or indirectly causes the failure of either Party to perform or completely perform this Agreement, then the Party affected by such Force Majeure shall give the other Party written notices without any delay, and shall provide details of such event within 15 days after sending out such notice, explaining the reasons for such failure of, partial or delay of performance.

8.2 If such Party claiming Force Majeure fails to notify the other Party and furnish it with proof pursuant to the above provision, such Party shall not be excused from the non-performance of its obligations hereunder. The Party so affected by the event of Force Majeure shall use reasonable efforts to minimize the consequences of such Force Majeure and to promptly resume performance hereunder whenever the causes of such excuse are cured. Should the Party so affected by the event of Force Majeure fail to resume performance hereunder when the causes of such excuse are cured, such Party shall be liable to the other Party.

8.3 In the event of Force Majeure, the Parties shall immediately consult with each other to find an equitable solution and shall use all reasonable endeavours to minimize the consequences of such Force Majeure.

9. **Notices**

9.1 All notices and other communications required or permitted to be given pursuant to this Agreement shall be delivered personally or sent by registered mail, postage prepaid, by a commercial courier service or by facsimile transmission to the address of such Party set forth below. A confirmation copy of each notice shall also be sent by email. The dates on which notices shall be deemed to have been effectively given shall be determined as follows:

9.1.1 Notices given by personal delivery, by courier service or by registered mail, postage prepaid, shall be deemed effectively given on the date of receipt or refusal at the address specified for notices.

9.1.2 Notices given by facsimile transmission shall be deemed effectively given on the date of successful transmission (as evidenced by an automatically generated confirmation of transmission).

9.2 For the purpose of notices, the addresses of the Parties are as follows:

Party A: Hangzhou Tuya Information Technology Co., Ltd.
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou
Attn: Liaohan CHEN

Party B: Hangzhou Tuya Technology Co., Ltd.
Address: Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou
Attn: Liaohan CHEN

9.3 Any Party may at any time change its address for notices by a notice delivered to the other Party in accordance with the terms hereof.

10. **Assignment**

10.1 Without Party A's prior written consent, Party B shall not assign its rights and obligations under this Agreement to any third party.

10.2 Party B agrees that Party A may assign its obligations and rights under this Agreement to any third party and in case of such assignment, Party A is only required to give written notice to Party B and does not need any consent from Party B for such assignment.

10.3 The rights and obligations under this Agreement shall be legally binding on the assignee and successor of the rights and obligations of the Parties to the Agreement (regardless of whether the transfer of such rights and obligations is caused by acquisition, reorganization, inheritance, assignment or other reasons).

11. **Severability**

In the event that one or several of the provisions of this Agreement are found to be invalid, illegal or unenforceable in any aspect in accordance with any laws or regulations, the validity, legality or enforceability of the remaining provisions of this Agreement shall not be affected or compromised in any aspect. The Parties shall negotiate in good faith to replace such invalid, illegal or unenforceable provisions with effective provisions that accomplish to the greatest extent permitted by law and the intentions of the Parties, and the economic effect of such effective provisions shall be as close as possible to the economic effect of those invalid, illegal or unenforceable provisions.

12. **Amendments and Supplements**

Any amendments and supplements to this Agreement shall be in writing. The amendment agreements and supplementary agreements that have been signed by the Parties and relate to this Agreement shall be an integral part of this Agreement and shall have the same legal validity as this Agreement. To the extent that it is reasonably practicable and not in violation of the laws

of China, the Parties hereto shall modify this Agreement in relation to the laws and regulations or regulatory opinions issued by the regulatory authorities in the place where the controlling shareholder of Party A is listed so that this Agreement meets the relevant requirements, if necessary.

13. **Language and Counterparts**

This Agreement is written in both Chinese and English language in two copies, each Party having one copy. The Chinese version and English version shall have equal legal validity.

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Business Cooperation Agreement as of the date first above written.

Party A: Hangzhou Tuya Information Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Business Cooperation Agreement as of the date first above written.

Party B: Hangzhou Tuya Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Exhibit 4.11

Amended and Restated Exclusive Option Agreement

This Amended and Restated Exclusive Option Agreement (this "Agreement") is executed by and among the following Parties as of January 19, 2022 in Hangzhou, the People's Republic of China ("China" or the "PRC"):

Party A: Hangzhou Tuya Information Technology Co., Ltd. (formerly Hangzhou Aixiangji Technology Co., Ltd.), a wholly foreign-owned enterprise, organized and existing under the laws of the PRC, with its address at Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou;

Party B: Liaohan CHEN, a Chinese citizen with Identification No.: ***** and

Party C: Hangzhou Tuya Technology Co., Ltd., a limited liability company organized and existing under the laws of the PRC, with its address at Room 602, Tower 1, Huace Center, Sandun Town, Hangzhou.

In this Agreement, Party A, Party B, and Party C shall each be referred to as a "Party" respectively, and they shall be collectively referred to as the "Parties."

Whereas:

Party B is a shareholder of Party C and as of the date hereof holds 13.10% of the equity interests of Party C.

The Parties are parties to that certain Exclusive Option Agreement dated as of December 23, 2014 (the "Original Agreement").

The Original Agreement provided that any amendments, changes, and supplements to the Original Agreement shall require the execution of a written agreement by all of the Parties.

The Parties desire to enter into this Agreement in order to amend, restate and replace in its entirety the rights and obligations under the Prior Agreement with the rights and obligations provided in this Agreement.

After mutual discussions and negotiations, the Parties have now reached the following agreement:

1. Sale and Purchase of Equity Interest

1.1 Option Granted

In consideration of the payment of RMB1.00 by Party A, the receipt and adequacy of which is hereby acknowledged by Party B, Party B hereby irrevocably grants Party A a binding and exclusive right to purchase, or designate one or more persons (each, a "Designee") to purchase the equity interests in Party C then held by Party B at once or at multiple times at any time in part or in whole at Party A's sole and absolute discretion to the extent permitted by Chinese laws and at the price described in Section 1.3 herein (such right being the "Equity Interest Purchase Option"). Except for Party A and the Designee(s), no other person shall be entitled to the Equity Interest Purchase Option or other rights with respect to the equity interests of Party B. Party C hereby agrees to the grant by Party B of the Equity Interest Purchase Option to Party A. The term "person" as used herein shall refer to individuals, corporations, partnerships, partners, enterprises, trusts, or non-corporate organizations.

1.2 Steps for Exercise of the Equity Interest Purchase Option

Subject to the provisions of the laws and regulations of China, Party A may exercise the Equity Interest Purchase Option by issuing a written notice to Party B (the "Equity Interest Purchase Option Notice"), specifying: (a) Party A's or the Designee's decision to exercise the Equity Interest Purchase Option; (b) the portion of equity interests to be purchased by Party A or the Designee from Party B (the

"Optioned Interests"); and (c) the date for purchasing the Optioned Interests or the date for transfer of the Optioned Interests.

1.3 Equity Interest Purchase Price

The purchase price of the Optioned Interests (the "Base Price") shall be RMB1.00. If PRC law requires a minimum price higher than the Base Price when Party A exercises the Equity Interest Purchase Option, the minimum price regulated by PRC law shall be the purchase price (collectively, the "Equity Interest Purchase Price").

1.4 Transfer of Optioned Interests

For each exercise of the Equity Interest Purchase Option:

1.4.1 Party B shall cause Party C to promptly convene a shareholders' meeting, at which a resolution shall be adopted approving Party B's transfer of the Optioned Interests to Party A and/or the Designee(s);

1.4.2 Party B shall obtain written statements from the other shareholders of Party C giving consent to the transfer of the equity interest to Party A and/or the Designee(s) and waiving any right of first refusal related thereto;

1.4.3 Party B shall execute an equity interest transfer contract with respect to each transfer with Party A and/or each Designee (whichever is applicable), in accordance with the provisions of this Agreement and the Equity Interest Purchase Option Notice regarding the Optioned Interests;

1.4.4 The relevant Parties shall execute all other necessary contracts, agreements, or documents, obtain all necessary government licenses and permits, and take all necessary actions to transfer the valid ownership of the Optioned Interests to Party A and/or the Designee(s), unencumbered by any security interests, and cause Party A and/or the Designee(s) to become the registered owner(s) of the Optioned Interests. For the purpose of this Section and this Agreement, "security interests" shall include securities, mortgages, third party's rights or interests, any stock options, acquisition right, right of first refusal, right to offset, ownership retention, or other security arrangements, but shall be deemed to exclude any security interest created by this Agreement, Party B's Equity Interest Pledge Agreement, and Party B's Power of Attorney. "Party B's Equity Interest Pledge Agreement" as used in this Agreement shall refer to the Interest Pledge Agreement executed by and among Party A, Party B and Party C on the date hereof and any modifications, amendments, and restatements thereto. "Party B's Power of Attorney" as used in this Agreement shall refer to the Power of Attorney executed by Party B on the date hereof granting Party A with a power of attorney and any modifications, amendments, and restatements thereto.

1.5 Asset Purchase Option

Party C hereby grants to Party A an irrevocable and exclusive option to have Party A or its Designee to purchase from Party C, at Party A's sole discretion, at any time and in accordance with the procedures decided by Party A in its sole discretion, any or all of the assets of Party C, to the extent permitted under PRC law, and at the lowest purchase price permitted by PRC law. The Parties shall then enter into a separate assets transfer agreement, specifying the terms and conditions of the transfer of the assets.

1.6 Party B and Party C agree that when Party A or a third party designated by Party A exercises the Equity Interest Purchase Option or the Asset Purchase Option under Section 1.5 herein, all the consideration received by Party B and Party C for this purpose will be fully returned to Party A or a third party designated by Party A upon the request of Party A, provided that the then prevailing rules and requirements in the PRC laws are complied with.

2. Covenants

2.1 Covenants regarding Party C

Party B (as a shareholder of Party C) and Party C hereby covenant on the following:

2.1.1 Without the prior written consent of Party A, they shall not in any manner supplement, change, or amend the articles of association of Party C, increase or decrease its registered capital, or change its structure of registered capital in other manners;

2.1.2 They shall maintain Party C's corporate existence in accordance with good financial and business standards and practices, as well as obtain and maintain all necessary government licenses and permits by prudently and effectively operating its business and handling its affairs. Without the prior written consent of Party A, Party C shall not change the principal business or significantly adjust the business scope, model, profiting model, marketing strategies, operating policy or relationship with customers;

2.1.3 Without the prior written consent of Party A, they shall not at any time following the date hereof, sell, transfer, mortgage, or dispose of in any manner any material assets of Party C or legal or beneficial interest in the material business or revenues of Party C of more than RMB500,000, or allow the encumbrance thereon of any security interests;

2.1.4 Without the prior written consent of Party A, they shall not incur, inherit, guarantee, or suffer the existence of any debt, except for payables incurred in the ordinary course of business other than through loans;

2.1.5 They shall always operate all of Party C's businesses within the normal

business scope to maintain the asset value of Party C and refrain from any action/omission that may affect Party C's operating status and asset value;

2.1.6 Without the prior written consent of Party A, they shall not cause Party C to execute any major contract or execute any other contracts, agreements or arrangements that contradicts with this Agreement or may prejudice the interests of Party A hereunder, except the contracts in the ordinary course of business (for the purpose of this subsection, a contract with a price exceeding RMB500,000 shall be deemed a major contract);

2.1.7 Without the prior written consent of Party A, they shall not cause Party C to provide any person with a loan or credit;

2.1.8 They shall provide Party A with information on Party C's business operations and financial condition at Party A's request;

2.1.9 If requested by Party A, they shall procure and maintain insurance in respect of Party C's assets and business from an insurance carrier acceptable to Party A, at an amount and type of coverage typical for companies that operate similar businesses;

2.1.10 Without the prior written consent of Party A, they shall not cause or permit Party C to merge, consolidate with, acquire, or invest in any person;

2.1.11 They shall immediately notify Party A of the occurrence or possible occurrence of any litigation, arbitration, or administrative proceedings relating to Party C's assets, business, or revenue;

2.1.12 To maintain the ownership by Party C of all of its assets, they shall execute all necessary or appropriate documents, take all necessary or appropriate actions, file all necessary or appropriate complaints, and raise necessary or appropriate defenses against all claims;

2.1.13 Without the prior written consent of Party A, they shall ensure that Party C shall not in any manner distribute dividends to its shareholders, provided that upon Party A's written request, Party C shall immediately distribute all distributable profits to its shareholders;

2.1.14 At the request of Party A, they shall appoint any person designated by Party A as the director or executive director of Party C.

2.1.15 Without Party A's prior written consent, they shall not engage in any business in competition with Party A or its affiliates; and

2.1.16 Unless otherwise required by PRC law, Party C shall not be dissolved or liquated without prior written consent by Party A. When Party C is liquated or dissolved for various reasons, Party B and Party C shall appoint the persons recommended by Party A as permitted by the PRC laws to establish a liquidation team to manage the assets of Party C.

2.1.17 Party A is entitled to offer advice and requests on the election or appointment of Directors and management members, the engagement and dismissal of employees, daily operation and management, financial management system and other matters to Party C from time to time. Party C shall strictly follow and implement the advice and requests, and Party B and Party C will adopt all necessary internal and external procedures to achieve the purpose above in accordance with the requirements of laws, the articles and this Agreement.

2.1.18 Party A is entitled to verify the accounts of Party C on a regular basis and at any time. Party C shall keep the accounts timely and accurately and provide its accounts to Party A upon its request. Within the valid term of this Agreement and without violating the applicable laws, Party C agrees to

coordinate with Party A and its shareholders (including directly or indirectly) to carry out the audit (including but not limited to the audit for connected transactions and other types of audits), to provide Party A and its shareholders and/or its entrusted auditor with the information and materials relating to the operation, businesses, customers, finance and employees of Party B and its subsidiaries, and agrees the disclosure of the information and materials by the shareholders of Party A to meet the security regulatory requirements where Party A is listed.

2.1.19 Without the prior written consent of Party A, Party B and Party C will not engage in any transaction which may materially affect the assets, obligations, rights or company operation of Party C. When any circumstance that has or may have significant adverse impacts on the business and operation of Party C occurs, Party C shall and Party B shall procure Party C to inform Party A, and shall use the best endeavors to prevent the occurrence of such circumstances and/or the increase of losses.

2.1.20 They shall strictly abide by the provisions of this Agreement and other agreements jointly or separately executed by and among Party B, Party C and Party A, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof or the interests of Party A hereunder and thereunder. Party C shall not execute with any third party, any partnership or joint operation or profit sharing arrangements, or other arrangements to transfer interests or share profits in the form of royalties, service fee or consulting fee.

2.1.21 Party B and Party C shall not cause Party B or Party C to have conflicts of interest with Party A and its shareholders in the manner of action or omission. If there are conflicts of interest (Party A has the right to unilaterally determine whether such conflicts of interest arise), Party B and Party C shall take measures as timely as possible to eliminate the conflicts with the consent of Party A or its designated persons.

2.2 Covenants of Party B

Party B hereby covenants to the following:

2.2.1 Without the prior written consent of Party A, Party B shall not sell, transfer, mortgage, or dispose of in any other manner any legal or beneficial interest in the equity interests in Party C held by Party B, or allow the encumbrance thereon, except for the interest placed in accordance with Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney;

2.2.2 Without the prior written consent of Party A, Party B shall cause the shareholders' meeting and/or the directors (or the executive director) of Party C not to approve any sale, transfer, mortgage, or disposition in any other manner of any legal or beneficial interest in the equity interests in Party C held by Party B, or allow the encumbrance thereon of any security interest, except for the interest placed in accordance with Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney;

2.2.3 Without the prior written consent of Party A, Party B shall cause the shareholders' meeting or the directors (or the executive director) of Party C not to approve the merger or consolidation with any person, or the acquisition of or investment in any person;

2.2.4 Party B shall immediately notify Party A of the occurrence or possible occurrence of any litigation, arbitration, or administrative proceedings relating to the equity interests in Party C held by Party B;

2.2.5 Party B shall cause the shareholders' meeting or the directors (or the executive director) of Party C to vote their approval of the transfer of the Optioned Interests as set forth in this Agreement and/or perform the obligations under Section 1.5 herein and to take any and all other actions that may be requested by Party A;

2.2.6 To the extent necessary to maintain Party B's ownership in Party C, Party B shall execute all necessary or appropriate documents, take all necessary or appropriate actions, file all necessary or appropriate complaints, and raise necessary or appropriate defenses against all claims;

2.2.7 Party B shall appoint any designee of Party A as the director or the executive director of Party C, at the request of Party A;

2.2.8 Party B hereby waives its right of first refusal in regards to the transfer of equity interest by any other shareholder of Party C to Party A (if any), and gives consent to the execution by each other shareholder of Party C with Party A and Party C the exclusive option agreement, the equity interest pledge agreement and the power of attorney similar to this Agreement, Party B's Equity Interest Pledge Agreement, and Party B's Power of Attorney, and accepts not to take any actions in conflict with such documents executed by the other shareholders;

2.2.9 Party B shall promptly donate any profits, interests, dividends, or proceeds of liquidation to Party A or any other person designated by Party A to the extent permitted under the applicable PRC laws; and

2.2.10 Party B shall strictly abide by the provisions of this Agreement and other contracts jointly or separately executed by and among Party B, Party C, and Party A, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof. To the extent that Party B has any remaining rights with respect to the equity interests subject to this Agreement hereunder or under Party B's Equity Interest Pledge Agreement or under Party B's Power of Attorney, Party B shall not exercise such rights except in accordance with the written instructions of Party A.

2.2.11 Party B shall refrain from any action/omission that may cause the reputation

of Party C to be adversely affected.

3. <u>Representations and Warranties</u>

Party B and Party C hereby represent and warrant to Party A, jointly and severally, as of the date of this Agreement and each date of transfer of the Optioned Interests, that:

3.1 They have the power, capacity, and authority to execute and deliver this Agreement and any equity interest transfer contracts to which they are parties concerning the Optioned Interests to be transferred thereunder or the Asset Purchase Option under Section 1.5 herein (each, a "Transfer Contract"), and to perform their obligations under this Agreement and any Transfer Contracts. Party B and Party C agree to enter into Transfer Contracts consistent with the terms of this Agreement upon Party A's exercise of the Equity Interest Purchase Option or the Asset Purchase Option under Section 1.5 herein. Without violating the PRC laws, this Agreement and the Transfer Contracts to which they are parties constitute or will constitute their legal, valid, and binding obligations, and shall be enforceable against them in accordance with the provisions thereof;

3.2 Party B and Party C have obtained any and all approvals and consents from the relevant government authorities and third parties (if required) for the execution, delivery, and performance of this Agreement.

3.3 The execution and delivery of this Agreement or any Transfer Contracts and the obligations under this Agreement or any Transfer Contracts shall not: (i) cause any violations of any applicable PRC laws (excluding Section 2.1.16 and Section 5.2 herein); (ii) be inconsistent with the articles of association, bylaws, or other organizational documents of Party C; (iii) cause the violation of any contracts or instruments to which they are a party or which are binding on them, or constitute any

breach under any contracts or instruments to which they are a party or which are binding on them; (iv) cause any violation of any condition for the grant and/or continued effectiveness of any licenses or permits issued to either of them; or (v) cause the suspension or revocation of or imposition of additional conditions to any licenses or permits issued to either of them;

3.4 Party B has a good and merchantable title to the equity interests held by Party B in Party C. Except for Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney, Party B has not placed any security interest on such equity interests;

3.5 Party C has a good and merchantable title to all of its assets, and has not placed any security interest on the aforementioned assets;

3.6 Party C does not have any outstanding debts, except for (i) debt incurred within its normal business scope; and (ii) debts disclosed to Party A for which Party A's written consent has been obtained.

3.7 Party C has complied with all laws and regulations of China applicable to asset acquisitions; and

3.8 There are no pending or threatened litigation, arbitration, or administrative proceedings relating to the equity interests in Party C, assets of Party C, or Party C.

4. Effective Date and Term

This Agreement shall become effective upon execution by the Parties, and remain in effect until all equity interests held by Party B in Party C have been transferred or assigned to Party A and/or any other person designated by Party A in accordance with this Agreement.

5. Governing Law and Dispute Resolution

5.1 Governing Law

The execution, effectiveness, construction, performance, amendment, and termination of this Agreement as well as any dispute resolution hereunder shall be governed by the laws of the PRC.

5.2 Methods of Dispute Resolution

In the event of any dispute arising with respect to the construction and performance of this Agreement, the Parties shall first attempt to resolve the dispute through friendly negotiations. In the event that the Parties fail to reach an agreement on the dispute within 30 days after either Party's request to the other Parties for dispute resolution through negotiations, either Party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration, in accordance with its arbitration rules. The arbitration shall be conducted in Shanghai, and the arbitration award shall be final and binding to all Parties. Subject to the provisions of the laws of China, the arbitrator may impose restrictions on and/or dispose of Party C's equity interests or land and other assets (such as for award of remedies), grant injunction (such as for the conduct of business or compelling the transfer of assets) or grant other interim relief, or order winding up of Party C through arbitration. The Parties agree that, subject to the provisions of the laws of China, pending the formation of the arbitration tribunal or in appropriate cases, the courts with jurisdiction (including the courts in Hong Kong, the place of incorporation of the listed company associated with Party A, the place of incorporation of Party C and the place where the principal assets of listed company associated with Party A or Party C are located) have the right to grant interim relief in support of the arbitration. The validity of this Section shall not be subject to any change, cancellation or termination of this Agreement. After the arbitral award takes effect, either Party shall have the right to apply to the said courts with jurisdiction for enforcement of the arbitral award.

6. Taxes and Fees

Each Party shall pay any and all transfer and registration taxes, expenses, and fees incurred thereby or levied thereon in accordance with the laws of China in connection with the preparation and execution of this Agreement and the Transfer Contracts, as well as the consummation of the transactions contemplated under this Agreement and the Transfer Contracts.

7. Notices

7.1 All notices and other communications required or permitted to be given pursuant to this Agreement shall be delivered personally or sent by registered mail, prepaid postage, commercial courier services, or facsimile transmission to the address of such Party set forth below. A confirmation copy of each notice shall also be sent by email. The dates on which notices shall be deemed to have been effectively given shall be determined as follows:

7.1.1 Notices given by personal delivery, courier services, registered mail, or prepaid postage shall be deemed effectively given on the date of receipt or refusal at the address specified for such notices;

7.1.2 Notices given by facsimile transmission shall be deemed effectively given on the date of successful transmission (as evidenced by an automatically generated confirmation of the transmission).

7.2 For the purpose of notices, the addresses of the Parties are as follows:

Party A: Hangzhou Tuya Information Technology Co., Ltd.
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou
Attn: Liaohan CHEN
Party B: Liaohan CHEN

Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou
Party C: Hangzhou Tuya Technology Co., Ltd.
Address: Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou
Attn: Liaohan CHEN

7.3 Any Party may at any time change its address for notices by having a notice delivered to the other Parties in accordance with the terms hereof.

8. Confidentiality

The Parties acknowledge that the existence and the terms of this Agreement, and any oral or written information exchanged between the Parties in connection with the preparation and performance of this Agreement are regarded as confidential information. Each Party shall maintain the confidentiality of all such confidential information, and without obtaining the written consent of other Parties, it shall not disclose any relevant confidential information to any third parties, except for the information that: (a) is or will be featured in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, rules of any stock exchange, or orders of the court or other government authorities; or (c) is required to be disclosed by any Party to its shareholders, directors, employees, legal counsels, or financial advisors regarding the transaction contemplated hereunder, provided that such shareholders, directors, employees, legal counsels, or financial advisors shall be bound by the confidential obligations similar to those set forth in this Section. Disclosure of any confidential information by the shareholders, director, employees of, or agencies engaged by any Party shall be deemed disclosure of such confidential information by such Party and that Party shall be held liable for breach of this Agreement.

9. Further Warranties

The Parties agree to promptly execute the documents that are reasonably required for or are conducive to the implementation of the provisions and purposes of this Agreement and to take further actions that are reasonably required for or are conducive to the implementation of the provisions and purposes of this Agreement.

10. Breach of Agreement

10.1 If Party B or Party C conducts any material breach of any term of this Agreement, Party A shall have right to terminate this Agreement and/or require Party B or Party C to compensate all damages; this Section 10 shall not prejudice any other rights of Party A herein;

10.2 Party B or Party C shall not have any right to terminate this Agreement in any event unless otherwise required by the applicable laws.

6. Miscellaneous

11.1 Amendments, changes, and supplements

Any amendments, changes, and supplements to this Agreement shall require the execution of a written agreement by all of the Parties. To the extent that it is reasonably practicable and not in violation of the laws of China, the Parties hereto shall modify this Agreement in relation to the laws, regulations or regulatory opinions issued by the regulatory authorities in the place where the controlling shareholder of Party A is listed so that this Agreement meets the relevant requirements, if necessary.

11.2 Entire agreement

Except for the amendments, supplements, or changes in writing executed after the execution of this Agreement, this Agreement shall constitute the entire agreement

reached by and among the Parties hereto with respect to the subject matter hereof, and shall supersede all prior oral and written consultations, representations, and contracts reached with respect to the subject matter of this Agreement.

11.3 Headings

The headings of this Agreement are for convenience only, and shall not be used to interpret, explain, or otherwise affect the meanings of the provisions of this Agreement.

11.4 Language

This Agreement is written in both Chinese and English, and contains three copies, with each Party having one copy. The Chinese version and English version shall have equal legal validity.

11.5 Severability

In the event that one or several of the provisions of this Agreement are found to be invalid, illegal, or unenforceable in any aspect in accordance with any laws or regulations, the validity, legality, or enforceability of the remaining provisions of this Agreement shall not be affected or compromised in any respect. The Parties shall strive in good faith to replace such invalid, illegal, or unenforceable provisions with effective provisions that accomplish to the greatest extent permitted by the relevant laws and the intentions of the Parties, and the economic effect of such effective provisions shall be as close as possible to the economic effect of those invalid, illegal, or unenforceable provisions.

11.6 Successors

This Agreement shall be binding on and shall inure to the interest of the respective successors of the Parties and the permitted assigns of such Parties. Where Party B has other circumstances that may affect Party B's exercise of its rights as a shareholder of Party C (including but not limited to death, incapacity, marriage, divorce, bankruptcy, etc.), any successors or agents of Party B shall cooperate with other parties to this Agreement to make all arrangements deemed necessary and sign all documents deemed necessary so that such successors or agents will not damage or hinder the performance of this Agreement.

11.7 Survival

11.7.1 Any obligations that occur or are due as a result of this Agreement upon the expiration or early termination of this Agreement shall survive the expiration or early termination thereof.

11.7.2 The provisions of Sections 5, 8, 10, and this Section 11.7 shall survive the termination of this Agreement.

11.8 Waivers

Any Party may waive the terms and conditions of this Agreement, provided that such a waiver must be provided in writing and shall require the signatures of the Parties. No waiver by any Party in certain circumstances with respect to a breach by other Parties shall operate as a waiver by such a Party with respect to any similar breach in other circumstances.

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party A: Hangzhou Tuya Information Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party B: Liaohan CHEN

By: /s/ Liaohan CHEN

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party C: Hangzhou Tuya Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Exhibit 4.12

Amended and Restated Exclusive Option Agreement

This Amended and Restated Exclusive Option Agreement (this "Agreement") is executed by and among the following Parties as of January 19, 2022 in Hangzhou, the People's Republic of China ("China" or the "PRC"):

Party A: Hangzhou Tuya Information Technology Co., Ltd. (formerly Hangzhou Aixiangji Technology Co., Ltd.), a wholly foreign-owned enterprise, organized and existing under the laws of the PRC, with its address at Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou;

Party B: Peihong CHEN, a Chinese citizen with Identification No.: *****; and

Party C: Hangzhou Tuya Technology Co., Ltd., a limited liability company organized and existing under the laws of the PRC, with its address at Room 602, Tower 1, Huace Center, Sandun Town, Hangzhou.

In this Agreement, Party A, Party B, and Party C shall each be referred to as a "Party" respectively, and they shall be collectively referred to as the "Parties."

Whereas:

Party B is a shareholder of Party C and as of the date hereof holds 4.91% of the equity interests of Party C.

The Parties are parties to that certain Exclusive Option Agreement dated as of December 23, 2014 (the "Original Agreement").

The Original Agreement provided that any amendments, changes, and supplements to the Original Agreement shall require the execution of a written agreement by all of the Parties.

The Parties desire to enter into this Agreement in order to amend, restate and replace in its entirety the rights and obligations under the Prior Agreement with the rights and obligations provided in this Agreement.

After mutual discussions and negotiations, the Parties have now reached the following agreement:

1. Sale and Purchase of Equity Interest

1.1 Option Granted

In consideration of the payment of RMB1.00 by Party A, the receipt and adequacy of which is hereby acknowledged by Party B, Party B hereby irrevocably grants Party A a binding and exclusive right to purchase, or designate one or more persons (each, a "Designee") to purchase the equity interests in Party C then held by Party B at once or at multiple times at any time in part or in whole at Party A's sole and absolute discretion to the extent permitted by Chinese laws and at the price described in Section 1.3 herein (such right being the "Equity Interest Purchase Option"). Except for Party A and the Designee(s), no other person shall be entitled to the Equity Interest Purchase Option or other rights with respect to the equity interests of Party B. Party C hereby agrees to the grant by Party B of the Equity Interest Purchase Option to Party A. The term "person" as used herein shall refer to individuals, corporations, partnerships, partners, enterprises, trusts, or non-corporate organizations.

1.2 Steps for Exercise of the Equity Interest Purchase Option

Subject to the provisions of the laws and regulations of China, Party A may exercise the Equity Interest Purchase Option by issuing a written notice to Party B (the "Equity Interest Purchase Option Notice"), specifying: (a) Party A's or the Designee's decision to exercise the Equity Interest Purchase Option; (b) the portion of equity interests to be purchased by Party A or the Designee from Party B (the

"Optioned Interests"); and (c) the date for purchasing the Optioned Interests or the date for transfer of the Optioned Interests.

1.3 Equity Interest Purchase Price

The purchase price of the Optioned Interests (the "Base Price") shall be RMB1.00. If PRC law requires a minimum price higher than the Base Price when Party A exercises the Equity Interest Purchase Option, the minimum price regulated by PRC law shall be the purchase price (collectively, the "Equity Interest Purchase Price").

1.4 Transfer of Optioned Interests

For each exercise of the Equity Interest Purchase Option:

1.4.1 Party B shall cause Party C to promptly convene a shareholders' meeting, at which a resolution shall be adopted approving Party B's transfer of the Optioned Interests to Party A and/or the Designee(s);

1.4.2 Party B shall obtain written statements from the other shareholders of Party C giving consent to the transfer of the equity interest to Party A and/or the Designee(s) and waiving any right of first refusal related thereto;

1.4.3 Party B shall execute an equity interest transfer contract with respect to each transfer with Party A and/or each Designee (whichever is applicable), in accordance with the provisions of this Agreement and the Equity Interest Purchase Option Notice regarding the Optioned Interests;

1.4.4 The relevant Parties shall execute all other necessary contracts, agreements, or documents, obtain all necessary government licenses and permits, and take all necessary actions to transfer the valid ownership of the Optioned Interests to Party A and/or the Designee(s), unencumbered by any security interests, and cause Party A and/or the Designee(s) to become the registered owner(s) of the Optioned Interests. For the purpose of this Section and this Agreement, "security interests" shall include securities, mortgages, third party's rights or interests, any stock options, acquisition right, right of first refusal, right to offset, ownership retention, or other security arrangements, but shall be deemed to exclude any security interest created by this Agreement, Party B's Equity Interest Pledge Agreement, and Party B's Power of Attorney. "Party B's Equity Interest Pledge Agreement" as used in this Agreement shall refer to the Interest Pledge Agreement executed by and among Party A, Party B and Party C on the date hereof and any modifications, amendments, and restatements thereto. "Party B's Power of Attorney" as used in this Agreement shall refer to the Power of Attorney executed by Party B on the date hereof granting Party A with a power of attorney and any modifications, amendments, and restatements thereto.

1.5 Asset Purchase Option

Party C hereby grants to Party A an irrevocable and exclusive option to have Party A or its Designee to purchase from Party C, at Party A's sole discretion, at any time and in accordance with the procedures decided by Party A in its sole discretion, any or all of the assets of Party C, to the extent permitted under PRC law, and at the lowest purchase price permitted by PRC law. The Parties shall then enter into a separate assets transfer agreement, specifying the terms and conditions of the transfer of the assets.

1.6 Party B and Party C agree that when Party A or a third party designated by Party A exercises the Equity Interest Purchase Option or the Asset Purchase Option under Section 1.5 herein, all the consideration received by Party B and Party C for this purpose will be fully returned to Party A or a third party designated by Party A upon the request of Party A, provided that the then prevailing rules and requirements in the PRC laws are complied with.

2. Covenants

2.1 Covenants regarding Party C

Party B (as a shareholder of Party C) and Party C hereby covenant on the following:

2.1.1 Without the prior written consent of Party A, they shall not in any manner supplement, change, or amend the articles of association of Party C, increase or decrease its registered capital, or change its structure of registered capital in other manners;

2.1.2 They shall maintain Party C's corporate existence in accordance with good financial and business standards and practices, as well as obtain and maintain all necessary government licenses and permits by prudently and effectively operating its business and handling its affairs. Without the prior written consent of Party A, Party C shall not change the principal business or significantly adjust the business scope, model, profiting model, marketing strategies, operating policy or relationship with customers;

2.1.3 Without the prior written consent of Party A, they shall not at any time following the date hereof, sell, transfer, mortgage, or dispose of in any manner any material assets of Party C or legal or beneficial interest in the material business or revenues of Party C of more than RMB500,000, or allow the encumbrance thereon of any security interests;

2.1.4 Without the prior written consent of Party A, they shall not incur, inherit, guarantee, or suffer the existence of any debt, except for payables incurred in the ordinary course of business other than through loans;

2.1.5 They shall always operate all of Party C's businesses within the normal

business scope to maintain the asset value of Party C and refrain from any action/omission that may affect Party C's operating status and asset value;

2.1.6 Without the prior written consent of Party A, they shall not cause Party C to execute any major contract or execute any other contracts, agreements or arrangements that contradicts with this Agreement or may prejudice the interests of Party A hereunder, except the contracts in the ordinary course of business (for the purpose of this subsection, a contract with a price exceeding RMB500,000 shall be deemed a major contract);

2.1.7 Without the prior written consent of Party A, they shall not cause Party C to provide any person with a loan or credit;

2.1.8 They shall provide Party A with information on Party C's business operations and financial condition at Party A's request;

2.1.9 If requested by Party A, they shall procure and maintain insurance in respect of Party C's assets and business from an insurance carrier acceptable to Party A, at an amount and type of coverage typical for companies that operate similar businesses;

2.1.10 Without the prior written consent of Party A, they shall not cause or permit Party C to merge, consolidate with, acquire, or invest in any person;

2.1.11 They shall immediately notify Party A of the occurrence or possible occurrence of any litigation, arbitration, or administrative proceedings relating to Party C's assets, business, or revenue;

2.1.12 To maintain the ownership by Party C of all of its assets, they shall execute all necessary or appropriate documents, take all necessary or appropriate actions, file all necessary or appropriate complaints, and raise necessary or appropriate defenses against all claims;

2.1.13 Without the prior written consent of Party A, they shall ensure that Party C shall not in any manner distribute dividends to its shareholders, provided that upon Party A's written request, Party C shall immediately distribute all distributable profits to its shareholders;

2.1.14 At the request of Party A, they shall appoint any person designated by Party A as the director or executive director of Party C.

2.1.15 Without Party A's prior written consent, they shall not engage in any business in competition with Party A or its affiliates; and

2.1.16 Unless otherwise required by PRC law, Party C shall not be dissolved or liquated without prior written consent by Party A. When Party C is liquated or dissolved for various reasons, Party B and Party C shall appoint the persons recommended by Party A as permitted by the PRC laws to establish a liquidation team to manage the assets of Party C.

2.1.17 Party A is entitled to offer advice and requests on the election or appointment of Directors and management members, the engagement and dismissal of employees, daily operation and management, financial management system and other matters to Party C from time to time. Party C shall strictly follow and implement the advice and requests, and Party B and Party C will adopt all necessary internal and external procedures to achieve the purpose above in accordance with the requirements of laws, the articles and this Agreement.

2.1.18 Party A is entitled to verify the accounts of Party C on a regular basis and at any time. Party C shall keep the accounts timely and accurately and provide its accounts to Party A upon its request. Within the valid term of this Agreement and without violating the applicable laws, Party C agrees to

coordinate with Party A and its shareholders (including directly or indirectly) to carry out the audit (including but not limited to the audit for connected transactions and other types of audits), to provide Party A and its shareholders and/or its entrusted auditor with the information and materials relating to the operation, businesses, customers, finance and employees of Party B and its subsidiaries, and agrees the disclosure of the information and materials by the shareholders of Party A to meet the security regulatory requirements where Party A is listed.

2.1.19 Without the prior written consent of Party A, Party B and Party C will not engage in any transaction which may materially affect the assets, obligations, rights or company operation of Party C. When any circumstance that has or may have significant adverse impacts on the business and operation of Party C occurs, Party C shall and Party B shall procure Party C to inform Party A, and shall use the best endeavors to prevent the occurrence of such circumstances and/or the increase of losses.

2.1.20 They shall strictly abide by the provisions of this Agreement and other agreements jointly or separately executed by and among Party B, Party C and Party A, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof or the interests of Party A hereunder and thereunder. Party C shall not execute with any third party, any partnership or joint operation or profit sharing arrangements, or other arrangements to transfer interests or share profits in the form of royalties, service fee or consulting fee.

2.1.21 Party B and Party C shall not cause Party B or Party C to have conflicts of interest with Party A and its shareholders in the manner of action or omission. If there are conflicts of interest (Party A has the right to unilaterally determine whether such conflicts of interest arise), Party B and Party C shall take measures as timely as possible to eliminate the conflicts with the consent of Party A or its designated persons.

2.2 Covenants of Party B

Party B hereby covenants to the following:

2.2.1 Without the prior written consent of Party A, Party B shall not sell, transfer, mortgage, or dispose of in any other manner any legal or beneficial interest in the equity interests in Party C held by Party B, or allow the encumbrance thereon, except for the interest placed in accordance with Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney;

2.2.2 Without the prior written consent of Party A, Party B shall cause the shareholders' meeting and/or the directors (or the executive director) of Party C not to approve any sale, transfer, mortgage, or disposition in any other manner of any legal or beneficial interest in the equity interests in Party C held by Party B, or allow the encumbrance thereon of any security interest, except for the interest placed in accordance with Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney;

2.2.3 Without the prior written consent of Party A, Party B shall cause the shareholders' meeting or the directors (or the executive director) of Party C not to approve the merger or consolidation with any person, or the acquisition of or investment in any person;

2.2.4 Party B shall immediately notify Party A of the occurrence or possible occurrence of any litigation, arbitration, or administrative proceedings relating to the equity interests in Party C held by Party B;

2.2.5 Party B shall cause the shareholders' meeting or the directors (or the executive director) of Party C to vote their approval of the transfer of the Optioned Interests as set forth in this Agreement and/or perform the obligations under Section 1.5 herein and to take any and all other actions that may be requested by Party A;

2.2.6 To the extent necessary to maintain Party B's ownership in Party C, Party B shall execute all necessary or appropriate documents, take all necessary or appropriate actions, file all necessary or appropriate complaints, and raise necessary or appropriate defenses against all claims;

2.2.7 Party B shall appoint any designee of Party A as the director or the executive director of Party C, at the request of Party A;

2.2.8 Party B hereby waives its right of first refusal in regards to the transfer of equity interest by any other shareholder of Party C to Party A (if any), and gives consent to the execution by each other shareholder of Party C with Party A and Party C the exclusive option agreement, the equity interest pledge agreement and the power of attorney similar to this Agreement, Party B's Equity Interest Pledge Agreement, and Party B's Power of Attorney, and accepts not to take any actions in conflict with such documents executed by the other shareholders;

2.2.9 Party B shall promptly donate any profits, interests, dividends, or proceeds of liquidation to Party A or any other person designated by Party A to the extent permitted under the applicable PRC laws; and

2.2.10 Party B shall strictly abide by the provisions of this Agreement and other contracts jointly or separately executed by and among Party B, Party C, and Party A, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof. To the extent that Party B has any remaining rights with respect to the equity interests subject to this Agreement hereunder or under Party B's Equity Interest Pledge Agreement or under Party B's Power of Attorney, Party B shall not exercise such rights except in accordance with the written instructions of Party A.

2.2.11 Party B shall refrain from any action/omission that may cause the reputation

of Party C to be adversely affected.

3. Representations and Warranties

Party B and Party C hereby represent and warrant to Party A, jointly and severally, as of the date of this Agreement and each date of transfer of the Optioned Interests, that:

3.1 They have the power, capacity, and authority to execute and deliver this Agreement and any equity interest transfer contracts to which they are parties concerning the Optioned Interests to be transferred thereunder or the Asset Purchase Option under Section 1.5 herein (each, a "Transfer Contract"), and to perform their obligations under this Agreement and any Transfer Contracts. Party B and Party C agree to enter into Transfer Contracts consistent with the terms of this Agreement upon Party A's exercise of the Equity Interest Purchase Option or the Asset Purchase Option under Section 1.5 herein. Without violating the PRC laws, this Agreement and the Transfer Contracts to which they are parties constitute or will constitute their legal, valid, and binding obligations, and shall be enforceable against them in accordance with the provisions thereof;

3.2 Party B and Party C have obtained any and all approvals and consents from the relevant government authorities and third parties (if required) for the execution, delivery, and performance of this Agreement.

3.3 The execution and delivery of this Agreement or any Transfer Contracts and the obligations under this Agreement or any Transfer Contracts shall not: (i) cause any violations of any applicable PRC laws (excluding Section 2.1.16 and Section 5.2 herein); (ii) be inconsistent with the articles of association, bylaws, or other organizational documents of Party C; (iii) cause the violation of any contracts or instruments to which they are a party or which are binding on them, or constitute any

breach under any contracts or instruments to which they are a party or which are binding on them; (iv) cause any violation of any condition for the grant and/or continued effectiveness of any licenses or permits issued to either of them; or (v) cause the suspension or revocation of or imposition of additional conditions to any licenses or permits issued to either of them;

3.4 Party B has a good and merchantable title to the equity interests held by Party B in Party C. Except for Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney, Party B has not placed any security interest on such equity interests;

3.5 Party C has a good and merchantable title to all of its assets, and has not placed any security interest on the aforementioned assets;

3.6 Party C does not have any outstanding debts, except for (i) debt incurred within its normal business scope; and (ii) debts disclosed to Party A for which Party A's written consent has been obtained.

3.7 Party C has complied with all laws and regulations of China applicable to asset acquisitions; and

3.8 There are no pending or threatened litigation, arbitration, or administrative proceedings relating to the equity interests in Party C, assets of Party C, or Party C.

4. Effective Date and Term

This Agreement shall become effective upon execution by the Parties, and remain in effect until all equity interests held by Party B in Party C have been transferred or assigned to Party A and/or any other person designated by Party A in accordance with this Agreement.

5. Governing Law and Dispute Resolution

5.1 Governing Law

The execution, effectiveness, construction, performance, amendment, and termination of this Agreement as well as any dispute resolution hereunder shall be governed by the laws of the PRC.

5.2 Methods of Dispute Resolution

In the event of any dispute arising with respect to the construction and performance of this Agreement, the Parties shall first attempt to resolve the dispute through friendly negotiations. In the event that the Parties fail to reach an agreement on the dispute within 30 days after either Party's request to the other Parties for dispute resolution through negotiations, either Party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration, in accordance with its arbitration rules. The arbitration shall be conducted in Shanghai, and the arbitration award shall be final and binding to all Parties. Subject to the provisions of the laws of China, the arbitrator may impose restrictions on and/or dispose of Party C's equity interests or land and other assets (such as for award of remedies), grant injunction (such as for the conduct of business or compelling the transfer of assets) or grant other interim relief, or order winding up of Party C through arbitration. The Parties agree that, subject to the provisions of the laws of China, pending the formation of the arbitration tribunal or in appropriate cases, the courts with jurisdiction (including the courts in Hong Kong, the place of incorporation of the listed company associated with Party A, the place of incorporation of Party C and the place where the principal assets of listed company associated with Party A or Party C are located) have the right to grant interim relief in support of the arbitration. The validity of this Section shall not be subject to any change, cancellation or termination of this Agreement. After the arbitral award takes effect, either Party shall have the right to apply to the said courts with jurisdiction for enforcement of the arbitral award.

6. **Taxes and Fees**

Each Party shall pay any and all transfer and registration taxes, expenses, and fees incurred thereby or levied thereon in accordance with the laws of China in connection with the preparation and execution of this Agreement and the Transfer Contracts, as well as the consummation of the transactions contemplated under this Agreement and the Transfer Contracts.

7. Notices

7.1 All notices and other communications required or permitted to be given pursuant to this Agreement shall be delivered personally or sent by registered mail, prepaid postage, commercial courier services, or facsimile transmission to the address of such Party set forth below. A confirmation copy of each notice shall also be sent by email. The dates on which notices shall be deemed to have been effectively given shall be determined as follows:

7.1.1 Notices given by personal delivery, courier services, registered mail, or prepaid postage shall be deemed effectively given on the date of receipt or refusal at the address specified for such notices;

7.1.2 Notices given by facsimile transmission shall be deemed effectively given on the date of successful transmission (as evidenced by an automatically generated confirmation of the transmission).

7.2 For the purpose of notices, the addresses of the Parties are as follows:

Party A: Hangzhou Tuya Information Technology Co., Ltd.
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou
Attn: Liaohan CHEN

Party B: Peihong CHEN

Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou

Party C: Hangzhou Tuya Technology Co., Ltd.
Address: Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou
Attn: Liaohan CHEN

7.3 Any Party may at any time change its address for notices by having a notice delivered to the other Parties in accordance with the terms hereof.

8. Confidentiality

The Parties acknowledge that the existence and the terms of this Agreement, and any oral or written information exchanged between the Parties in connection with the preparation and performance of this Agreement are regarded as confidential information. Each Party shall maintain the confidentiality of all such confidential information, and without obtaining the written consent of other Parties, it shall not disclose any relevant confidential information to any third parties, except for the information that: (a) is or will be featured in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, rules of any stock exchange, or orders of the court or other government authorities; or (c) is required to be disclosed by any Party to its shareholders, directors, employees, legal counsels, or financial advisors regarding the transaction contemplated hereunder, provided that such shareholders, directors, employees, legal counsels, or financial advisors shall be bound by the confidential obligations similar to those set forth in this Section. Disclosure of any confidential information by the shareholders, director, employees of, or agencies engaged by any Party shall be deemed disclosure of such confidential information by such Party and that Party shall be held liable for breach of this Agreement.

9. Further Warranties

The Parties agree to promptly execute the documents that are reasonably required for or are conducive to the implementation of the provisions and purposes of this Agreement and to take further actions that are reasonably required for or are conducive to the implementation of the provisions and purposes of this Agreement.

10. Breach of Agreement

10.1 If Party B or Party C conducts any material breach of any term of this Agreement, Party A shall have right to terminate this Agreement and/or require Party B or Party C to compensate all damages; this Section 10 shall not prejudice any other rights of Party A herein;

10.2 Party B or Party C shall not have any right to terminate this Agreement in any event unless otherwise required by the applicable laws.

6. Miscellaneous

11.1 Amendments, changes, and supplements

Any amendments, changes, and supplements to this Agreement shall require the execution of a written agreement by all of the Parties. To the extent that it is reasonably practicable and not in violation of the laws of China, the Parties hereto shall modify this Agreement in relation to the laws, regulations or regulatory opinions issued by the regulatory authorities in the place where the controlling shareholder of Party A is listed so that this Agreement meets the relevant requirements, if necessary.

11.2 Entire agreement

Except for the amendments, supplements, or changes in writing executed after the execution of this Agreement, this Agreement shall constitute the entire agreement

reached by and among the Parties hereto with respect to the subject matter hereof, and shall supersede all prior oral and written consultations, representations, and contracts reached with respect to the subject matter of this Agreement.

11.3 Headings

The headings of this Agreement are for convenience only, and shall not be used to interpret, explain, or otherwise affect the meanings of the provisions of this Agreement.

11.4 Language

This Agreement is written in both Chinese and English, and contains three copies, with each Party having one copy. The Chinese version and English version shall have equal legal validity.

11.5 Severability

In the event that one or several of the provisions of this Agreement are found to be invalid, illegal, or unenforceable in any aspect in accordance with any laws or regulations, the validity, legality, or enforceability of the remaining provisions of this Agreement shall not be affected or compromised in any respect. The Parties shall strive in good faith to replace such invalid, illegal, or unenforceable provisions with effective provisions that accomplish to the greatest extent permitted by the relevant laws and the intentions of the Parties, and the economic effect of such effective provisions shall be as close as possible to the economic effect of those invalid, illegal, or unenforceable provisions.

11.6 Successors

This Agreement shall be binding on and shall inure to the interest of the respective successors of the Parties and the permitted assigns of such Parties. Where Party B has other circumstances that may affect Party B's exercise of its rights as a shareholder of Party C (including but not limited to death, incapacity, marriage, divorce, bankruptcy, etc.), any successors or agents of Party B shall cooperate with other parties to this Agreement to make all arrangements deemed necessary and sign all documents deemed necessary so that such successors or agents will not damage or hinder the performance of this Agreement.

11.7 Survival

11.7.1 Any obligations that occur or are due as a result of this Agreement upon the expiration or early termination of this Agreement shall survive the expiration or early termination thereof.

11.7.2 The provisions of Sections 5, 8, 10, and this Section 11.7 shall survive the termination of this Agreement.

11.8 Waivers

Any Party may waive the terms and conditions of this Agreement, provided that such a waiver must be provided in writing and shall require the signatures of the Parties. No waiver by any Party in certain circumstances with respect to a breach by other Parties shall operate as a waiver by such a Party with respect to any similar breach in other circumstances.

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written

Party A: Hangzhou Tuya Information Technology Co., Ltd.
By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

IN WITNESS WHEREOF. The parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party B: Peihong CHEN
By: /s/ Peihong CHEN

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party C: Hangzhou Tuya Technology Co., Ltd.
By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Exhibit 4.13

Amended and Restated Exclusive Option Agreement

This Amended and Restated Exclusive Option Agreement (this "Agreement") is executed by and among the following Parties as of January 19, 2022 in Hangzhou, the People's Republic of China ("China" or the "PRC"):

Party A: Hangzhou Tuya Information Technology Co., Ltd. (formerly Hangzhou Aixiangji Technology Co., Ltd.), a wholly foreign-owned enterprise, organized and existing under the laws of the PRC, with its address at Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou;

Party B: Ruixin ZHOU, a Chinese citizen with Identification No.: *****; and

Party C: Hangzhou Tuya Technology Co., Ltd., a limited liability company organized and existing under the laws of the PRC, with its address at Room 602, Tower 1, Huace Center, Sandun Town, Hangzhou.

In this Agreement, Party A, Party B, and Party C shall each be referred to as a "Party" respectively, and they shall be collectively referred to as the "Parties."

Whereas:

Party B is a shareholder of Party C and as of the date hereof holds 9.83% of the equity interests of Party C.

The Parties are parties to that certain Exclusive Option Agreement dated as of December 23, 2014 (the "Original Agreement").

The Original Agreement provided that any amendments, changes, and supplements to the Original Agreement shall require the execution of a written agreement by all of the Parties.

The Parties desire to enter into this Agreement in order to amend, restate and replace in its entirety the rights and obligations under the Prior Agreement with the rights and obligations provided in this Agreement.

After mutual discussions and negotiations, the Parties have now reached the following agreement:

1. Sale and Purchase of Equity Interest

1.1 Option Granted

In consideration of the payment of RMB1.00 by Party A, the receipt and adequacy of which is hereby acknowledged by Party B, Party B hereby irrevocably grants Party A a binding and exclusive right to purchase, or designate one or more persons (each, a "Designee") to purchase the equity interests in Party C then held by Party B at once or at multiple times at any time in part or in whole at Party A's sole and absolute discretion to the extent permitted by Chinese laws and at the price described in Section 1.3 herein (such right being the "Equity Interest Purchase Option"). Except for Party A and the Designee(s), no other person shall be entitled to the Equity Interest Purchase Option or other rights with respect to the equity interests of Party B. Party C hereby agrees to the grant by Party B of the Equity Interest Purchase Option to Party A. The term "person" as used herein shall refer to individuals, corporations, partnerships, partners, enterprises, trusts, or non-corporate organizations.

1.2 Steps for Exercise of the Equity Interest Purchase Option

Subject to the provisions of the laws and regulations of China, Party A may exercise the Equity Interest Purchase Option by issuing a written notice to Party B (the "Equity Interest Purchase Option Notice"), specifying: (a) Party A's or the Designee's decision to exercise the Equity Interest Purchase Option; (b) the portion of equity interests to be purchased by Party A or the Designee from Party B (the

"Optioned Interests"); and (c) the date for purchasing the Optioned Interests or the date for transfer of the Optioned Interests.

1.3 Equity Interest Purchase Price

The purchase price of the Optioned Interests (the "Base Price") shall be RMB1.00. If PRC law requires a minimum price higher than the Base Price when Party A exercises the Equity Interest Purchase Option, the minimum price regulated by PRC law shall be the purchase price (collectively, the "Equity Interest Purchase Price").

1.4 Transfer of Optioned Interests

For each exercise of the Equity Interest Purchase Option:

1.4.1 Party B shall cause Party C to promptly convene a shareholders' meeting, at which a resolution shall be adopted approving Party B's transfer of the Optioned Interests to Party A and/or the Designee(s);

1.4.2 Party B shall obtain written statements from the other shareholders of Party C giving consent to the transfer of the equity interest to Party A and/or the Designee(s) and waiving any right of first refusal related thereto;

1.4.3 Party B shall execute an equity interest transfer contract with respect to each transfer with Party A and/or each Designee (whichever is applicable), in accordance with the provisions of this Agreement and the Equity Interest Purchase Option Notice regarding the Optioned Interests;

1.4.4 The relevant Parties shall execute all other necessary contracts, agreements, or documents, obtain all necessary government licenses and permits, and take all necessary actions to transfer the valid ownership of the Optioned Interests to Party A and/or the Designee(s), unencumbered by any security interests, and cause Party A and/or the Designee(s) to become the registered owner(s) of the Optioned Interests. For the purpose of this Section and this Agreement, "security interests" shall include securities, mortgages, third party's rights or interests, any stock options, acquisition right, right of first refusal, right to offset, ownership retention, or other security arrangements, but shall be deemed to exclude any security interest created by this Agreement, Party B's Equity Interest Pledge Agreement, and Party B's Power of Attorney. "Party B's Equity Interest Pledge Agreement" as used in this Agreement shall refer to the Interest Pledge Agreement executed by and among Party A, Party B and Party C on the date hereof and any modifications, amendments, and restatements thereto. "Party B's Power of Attorney" as used in this Agreement shall refer to the Power of Attorney executed by Party B on the date hereof granting Party A with a power of attorney and any modifications, amendments, and restatements thereto.

1.5 Asset Purchase Option

Party C hereby grants to Party A an irrevocable and exclusive option to have Party A or its Designee to purchase from Party C, at Party A's sole discretion, at any time and in accordance with the procedures decided by Party A in its sole discretion, any or all of the assets of Party C, to the extent permitted under PRC law, and at the lowest purchase price permitted by PRC law. The Parties shall then enter into a separate assets transfer agreement, specifying the terms and conditions of the transfer of the assets.

1.6 Party B and Party C agree that when Party A or a third party designated by Party A exercises the Equity Interest Purchase Option or the Asset Purchase Option under Section 1.5 herein, all the consideration received by Party B and Party C for this purpose will be fully returned to Party A or a third party designated by Party A upon the request of Party A, provided that the then prevailing rules and requirements in the PRC laws are complied with.

2. Covenants

2.1 Covenants regarding Party C

Party B (as a shareholder of Party C) and Party C hereby covenant on the following:

2.1.1 Without the prior written consent of Party A, they shall not in any manner supplement, change, or amend the articles of association of Party C, increase or decrease its registered capital, or change its structure of registered capital in other manners;

2.1.2 They shall maintain Party C's corporate existence in accordance with good financial and business standards and practices, as well as obtain and maintain all necessary government licenses and permits by prudently and effectively operating its business and handling its affairs. Without the prior written consent of Party A, Party C shall not change the principal business or significantly adjust the business scope, model, profiting model, marketing strategies, operating policy or relationship with customers;

2.1.3 Without the prior written consent of Party A, they shall not at any time following the date hereof, sell, transfer, mortgage, or dispose of in any manner any material assets of Party C or legal or beneficial interest in the material business or revenues of Party C of more than RMB500,000, or allow the encumbrance thereon of any security interests;

2.1.4 Without the prior written consent of Party A, they shall not incur, inherit, guarantee, or suffer the existence of any debt, except for payables incurred in the ordinary course of business other than through loans;

2.1.5 They shall always operate all of Party C's businesses within the normal

business scope to maintain the asset value of Party C and refrain from any action/omission that may affect Party C's operating status and asset value;

2.1.6 Without the prior written consent of Party A, they shall not cause Party C to execute any major contract or execute any other contracts, agreements or arrangements that contradicts with this Agreement or may prejudice the interests of Party A hereunder, except the contracts in the ordinary course of business (for the purpose of this subsection, a contract with a price exceeding RMB500,000 shall be deemed a major contract);

2.1.7 Without the prior written consent of Party A, they shall not cause Party C to provide any person with a loan or credit;

2.1.8 They shall provide Party A with information on Party C's business operations and financial condition at Party A's request;

2.1.9 If requested by Party A, they shall procure and maintain insurance in respect of Party C's assets and business from an insurance carrier acceptable to Party A, at an amount and type of coverage typical for companies that operate similar businesses;

2.1.10 Without the prior written consent of Party A, they shall not cause or permit Party C to merge, consolidate with, acquire, or invest in any person;

2.1.11 They shall immediately notify Party A of the occurrence or possible occurrence of any litigation, arbitration, or administrative proceedings relating to Party C's assets, business, or revenue;

2.1.12 To maintain the ownership by Party C of all of its assets, they shall execute all necessary or appropriate documents, take all necessary or appropriate actions, file all necessary or appropriate complaints, and raise necessary or appropriate defenses against all claims;

2.1.13 Without the prior written consent of Party A, they shall ensure that Party C shall not in any manner distribute dividends to its shareholders, provided that upon Party A's written request, Party C shall immediately distribute all distributable profits to its shareholders;

2.1.14 At the request of Party A, they shall appoint any person designated by Party A as the director or executive director of Party C.

2.1.15 Without Party A's prior written consent, they shall not engage in any business in competition with Party A or its affiliates; and

2.1.16 Unless otherwise required by PRC law, Party C shall not be dissolved or liquated without prior written consent by Party A. When Party C is liquated or dissolved for various reasons, Party B and Party C shall appoint the persons recommended by Party A as permitted by the PRC laws to establish a liquidation team to manage the assets of Party C.

2.1.17 Party A is entitled to offer advice and requests on the election or appointment of Directors and management members, the engagement and dismissal of employees, daily operation and management, financial management system and other matters to Party C from time to time. Party C shall strictly follow and implement the advice and requests, and Party B and Party C will adopt all necessary internal and external procedures to achieve the purpose above in accordance with the requirements of laws, the articles and this Agreement.

2.1.18 Party A is entitled to verify the accounts of Party C on a regular basis and at any time. Party C shall keep the accounts timely and accurately and provide its accounts to Party A upon its request. Within the valid term of this Agreement and without violating the applicable laws, Party C agrees to

coordinate with Party A and its shareholders (including directly or indirectly) to carry out the audit (including but not limited to the audit for connected transactions and other types of audits), to provide Party A and its shareholders and/or its entrusted auditor with the information and materials relating to the operation, businesses, customers, finance and employees of Party B and its subsidiaries, and agrees the disclosure of the information and materials by the shareholders of Party A to meet the security regulatory requirements where Party A is listed.

2.1.19 Without the prior written consent of Party A, Party B and Party C will not engage in any transaction which may materially affect the assets, obligations, rights or company operation of Party C. When any circumstance that has or may have significant adverse impacts on the business and operation of Party C occurs, Party C shall and Party B shall procure Party C to inform Party A, and shall use the best endeavors to prevent the occurrence of such circumstances and/or the increase of losses.

2.1.20 They shall strictly abide by the provisions of this Agreement and other agreements jointly or separately executed by and among Party B, Party C and Party A, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof or the interests of Party A hereunder and thereunder. Party C shall not execute with any third party, any partnership or joint operation or profit sharing arrangements, or other arrangements to transfer interests or share profits in the form of royalties, service fee or consulting fee.

2.1.21 Party B and Party C shall not cause Party B or Party C to have conflicts of interest with Party A and its shareholders in the manner of action or omission. If there are conflicts of interest (Party A has the right to unilaterally determine whether such conflicts of interest arise), Party B and Party C shall take measures as timely as possible to eliminate the conflicts with the consent of Party A or its designated persons.

2.2 Covenants of Party B

Party B hereby covenants to the following:

2.2.1 Without the prior written consent of Party A, Party B shall not sell, transfer, mortgage, or dispose of in any other manner any legal or beneficial interest in the equity interests in Party C held by Party B, or allow the encumbrance thereon, except for the interest placed in accordance with Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney;

2.2.2 Without the prior written consent of Party A, Party B shall cause the shareholders' meeting and/or the directors (or the executive director) of Party C not to approve any sale, transfer, mortgage, or disposition in any other manner of any legal or beneficial interest in the equity interests in Party C held by Party B, or allow the encumbrance thereon of any security interest, except for the interest placed in accordance with Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney;

2.2.3 Without the prior written consent of Party A, Party B shall cause the shareholders' meeting or the directors (or the executive director) of Party C not to approve the merger or consolidation with any person, or the acquisition of or investment in any person;

2.2.4 Party B shall immediately notify Party A of the occurrence or possible occurrence of any litigation, arbitration, or administrative proceedings relating to the equity interests in Party C held by Party B;

2.2.5 Party B shall cause the shareholders' meeting or the directors (or the executive director) of Party C to vote their approval of the transfer of the Optioned Interests as set forth in this Agreement and/or perform the obligations under Section 1.5 herein and to take any and all other actions that may be requested by Party A;

2.2.6 To the extent necessary to maintain Party B's ownership in Party C, Party B shall execute all necessary or appropriate documents, take all necessary or appropriate actions, file all necessary or appropriate complaints, and raise necessary or appropriate defenses against all claims;

2.2.7 Party B shall appoint any designee of Party A as the director or the executive director of Party C, at the request of Party A;

2.2.8 Party B hereby waives its right of first refusal in regards to the transfer of equity interest by any other shareholder of Party C to Party A (if any), and gives consent to the execution by each other shareholder of Party C with Party A and Party C the exclusive option agreement, the equity interest pledge agreement and the power of attorney similar to this Agreement, Party B's Equity Interest Pledge Agreement, and Party B's Power of Attorney, and accepts not to take any actions in conflict with such documents executed by the other shareholders;

2.2.9 Party B shall promptly donate any profits, interests, dividends, or proceeds of liquidation to Party A or any other person designated by Party A to the extent permitted under the applicable PRC laws; and

2.2.10 Party B shall strictly abide by the provisions of this Agreement and other contracts jointly or separately executed by and among Party B, Party C, and Party A, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof. To the extent that Party B has any remaining rights with respect to the equity interests subject to this Agreement hereunder or under Party B's Equity Interest Pledge Agreement or under Party B's Power of Attorney, Party B shall not exercise such rights except in accordance with the written instructions of Party A.

2.2.11 Party B shall refrain from any action/omission that may cause the reputation

of Party C to be adversely affected.

3. Representations and Warranties

Party B and Party C hereby represent and warrant to Party A, jointly and severally, as of the date of this Agreement and each date of transfer of the Optioned Interests, that:

3.1 They have the power, capacity, and authority to execute and deliver this Agreement and any equity interest transfer contracts to which they are parties concerning the Optioned Interests to be transferred thereunder or the Asset Purchase Option under Section 1.5 herein (each, a "Transfer Contract"), and to perform their obligations under this Agreement and any Transfer Contracts. Party B and Party C agree to enter into Transfer Contracts consistent with the terms of this Agreement upon Party A's exercise of the Equity Interest Purchase Option or the Asset Purchase Option under Section 1.5 herein. Without violating the PRC laws, this Agreement and the Transfer Contracts to which they are parties constitute or will constitute their legal, valid, and binding obligations, and shall be enforceable against them in accordance with the provisions thereof;

3.2 Party B and Party C have obtained any and all approvals and consents from the relevant government authorities and third parties (if required) for the execution, delivery, and performance of this Agreement.

3.3 The execution and delivery of this Agreement or any Transfer Contracts and the obligations under this Agreement or any Transfer Contracts shall not: (i) cause any violations of any applicable PRC laws (excluding Section 2.1.16 and Section 5.2 herein); (ii) be inconsistent with the articles of association, bylaws, or other organizational documents of Party C; (iii) cause the violation of any contracts or instruments to which they are a party or which are binding on them, or constitute any

breach under any contracts or instruments to which they are a party or which are binding on them; (iv) cause any violation of any condition for the grant and/or continued effectiveness of any licenses or permits issued to either of them; or (v) cause the suspension or revocation of or imposition of additional conditions to any licenses or permits issued to either of them;

3.4 Party B has a good and merchantable title to the equity interests held by Party B in Party C. Except for Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney, Party B has not placed any security interest on such equity interests;

3.5 Party C has a good and merchantable title to all of its assets, and has not placed any security interest on the aforementioned assets;

3.6 Party C does not have any outstanding debts, except for (i) debt incurred within its normal business scope; and (ii) debts disclosed to Party A for which Party A's written consent has been obtained.

3.7 Party C has complied with all laws and regulations of China applicable to asset acquisitions; and

3.8 There are no pending or threatened litigation, arbitration, or administrative proceedings relating to the equity interests in Party C, assets of Party C, or Party C.

4. Effective Date and Term

This Agreement shall become effective upon execution by the Parties, and remain in effect until all equity interests held by Party B in Party C have been transferred or assigned to Party A and/or any other person designated by Party A in accordance with this Agreement.

5. Governing Law and Dispute Resolution

5.1 Governing Law

The execution, effectiveness, construction, performance, amendment, and termination of this Agreement as well as any dispute resolution hereunder shall be governed by the laws of the PRC.

5.2 Methods of Dispute Resolution

In the event of any dispute arising with respect to the construction and performance of this Agreement, the Parties shall first attempt to resolve the dispute through friendly negotiations. In the event that the Parties fail to reach an agreement on the dispute within 30 days after either Party's request to the other Parties for dispute resolution through negotiations, either Party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration, in accordance with its arbitration rules. The arbitration shall be conducted in Shanghai, and the arbitration award shall be final and binding to all Parties. Subject to the provisions of the laws of China, the arbitrator may impose restrictions on and/or dispose of Party C's equity interests or land and other assets (such as for award of remedies), grant injunction (such as for the conduct of business or compelling the transfer of assets) or grant other interim relief, or order winding up of Party C through arbitration. The Parties agree that, subject to the provisions of the laws of China, pending the formation of the arbitration tribunal or in appropriate cases, the courts with jurisdiction (including the courts in Hong Kong, the place of incorporation of the listed company associated with Party A, the place of incorporation of Party C and the place where the principal assets of listed company associated with Party A or Party C are located) have the right to grant interim relief in support of the arbitration. The validity of this Section shall not be subject to any change, cancellation or termination of this Agreement. After the arbitral award takes effect, either Party shall have the right to apply to the said courts with jurisdiction for enforcement of the arbitral award.

6. Taxes and Fees

Each Party shall pay any and all transfer and registration taxes, expenses, and fees incurred thereby or levied thereon in accordance with the laws of China in connection with the preparation and execution of this Agreement and the Transfer Contracts, as well as the consummation of the transactions contemplated under this Agreement and the Transfer Contracts.

7. Notices

7.1 All notices and other communications required or permitted to be given pursuant to this Agreement shall be delivered personally or sent by registered mail, prepaid postage, commercial courier services, or facsimile transmission to the address of such Party set forth below. A confirmation copy of each notice shall also be sent by email. The dates on which notices shall be deemed to have been effectively given shall be determined as follows:

7.1.1 Notices given by personal delivery, courier services, registered mail, or prepaid postage shall be deemed effectively given on the date of receipt or refusal at the address specified for such notices;

7.1.2 Notices given by facsimile transmission shall be deemed effectively given on the date of successful transmission (as evidenced by an automatically generated confirmation of the transmission).

7.2 For the purpose of notices, the addresses of the Parties are as follows:

Party A: Hangzhou Tuya Information Technology Co., Ltd.

Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District,

Attn: Liaohan CHEN

Party B: Ruixin ZHOU

Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou

Party C: Hangzhou Tuya Technology Co., Ltd.

Address: Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou

Attn: Liaohan CHEN

7.3 Any Party may at any time change its address for notices by having a notice delivered to the other Parties in accordance with the terms hereof.

8. Confidentiality

The Parties acknowledge that the existence and the terms of this Agreement, and any oral or written information exchanged between the Parties in connection with the preparation and performance of this Agreement are regarded as confidential information. Each Party shall maintain the confidentiality of all such confidential information, and without obtaining the written consent of other Parties, it shall not disclose any relevant confidential information to any third parties, except for the information that: (a) is or will be featured in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, rules of any stock exchange, or orders of the court or other government authorities; or (c) is required to be disclosed by any Party to its shareholders, directors, employees, legal counsels, or financial advisors regarding the transaction contemplated hereunder, provided that such shareholders, directors, employees, legal counsels, or financial advisors shall be bound by the confidential obligations similar to those set forth in this Section. Disclosure of any confidential information by the shareholders, director, employees of, or agencies engaged by any Party shall be deemed disclosure of such confidential information by such Party and that Party shall be held liable for breach of this Agreement.

9. Further Warranties

The Parties agree to promptly execute the documents that are reasonably required for or are conducive to the implementation of the provisions and purposes of this Agreement and to take further actions that are reasonably required for or are conducive to the implementation of the provisions and purposes of this Agreement.

10. Breach of Agreement

10.1 If Party B or Party C conducts any material breach of any term of this Agreement, Party A shall have right to terminate this Agreement and/or require Party B or Party C to compensate all damages; this Section 10 shall not prejudice any other rights of Party A herein;

10.2 Party B or Party C shall not have any right to terminate this Agreement in any event unless otherwise required by the applicable laws.

6. Miscellaneous

11.1 Amendments, changes, and supplements

Any amendments, changes, and supplements to this Agreement shall require the execution of a written agreement by all of the Parties. To the extent that it is reasonably practicable and not in violation of the laws of China, the Parties hereto shall modify this Agreement in relation to the laws, regulations or regulatory opinions issued by the regulatory authorities in the place where the controlling shareholder of Party A is listed so that this Agreement meets the relevant requirements, if necessary.

11.2 Entire agreement

Except for the amendments, supplements, or changes in writing executed after the execution of this Agreement, this Agreement shall constitute the entire agreement

reached by and among the Parties hereto with respect to the subject matter hereof, and shall supersede all prior oral and written consultations, representations, and contracts reached with respect to the subject matter of this Agreement.

11.3 Headings

The headings of this Agreement are for convenience only, and shall not be used to interpret, explain, or otherwise affect the meanings of the provisions of this Agreement.

11.4 Language

This Agreement is written in both Chinese and English, and contains three copies, with each Party having one copy. The Chinese version and English version shall have equal legal validity.

11.5 Severability

In the event that one or several of the provisions of this Agreement are found to be invalid, illegal, or unenforceable in any aspect in accordance with any laws or regulations, the validity, legality, or enforceability of the remaining provisions of this Agreement shall not be affected or compromised in any respect. The Parties shall strive in good faith to replace such invalid, illegal, or unenforceable provisions with effective provisions that accomplish to the greatest extent permitted by the relevant laws and the intentions of the Parties, and the economic effect of such effective provisions shall be as close as possible to the economic effect of those invalid, illegal, or unenforceable provisions.

11.6 Successors

This Agreement shall be binding on and shall inure to the interest of the respective successors of the Parties and the permitted assigns of such Parties. Where Party B has other circumstances that may affect Party B's exercise of its rights as a shareholder of Party C (including but not limited to death, incapacity, marriage, divorce, bankruptcy, etc.), any successors or agents of Party B shall cooperate with other parties to this Agreement to make all arrangements deemed necessary and sign all documents deemed necessary so that such successors or agents will not damage or hinder the performance of this Agreement.

11.7 Survival

11.7.1 Any obligations that occur or are due as a result of this Agreement upon the expiration or early termination of this Agreement shall survive the expiration or early termination thereof.

11.7.2 The provisions of Sections 5, 8, 10, and this Section 11.7 shall survive the termination of this Agreement.

11.8 Waivers

Any Party may waive the terms and conditions of this Agreement, provided that such a waiver must be provided in writing and shall require the signatures of the Parties. No waiver by any Party in certain circumstances with respect to a breach by other Parties shall operate as a waiver by such a Party with respect to any similar breach in other circumstances.

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party A: Hangzhou Tuya Information Technology Co., Ltd.

By: /s/ Liaohan CHEN

Name: Liaohan CHEN

Title: Legal Representative

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party B: Ruixin ZHOU

By: /s/ Ruixin ZHOU

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party C: Hangzhou Tuya Technology Co., Ltd.

By: /s/ Liaohan CHEN

Name: Liaohan CHEN

Title: Legal Representative

Exhibit 4.14

Second Amended and Restated Exclusive Option Agreement

This Second Amended and Restated Exclusive Option Agreement (this "Agreement") is executed by and among the following Parties as of January 19, 2022 in Hangzhou, the People's Republic of China ("China" or the "PRC"):

Party A: Hangzhou Tuya Information Technology Co., Ltd. (formerly Hangzhou Aixiangji Technology Co., Ltd.), a wholly foreign-owned enterprise, organized and existing under the laws of the PRC, with its address at Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou;

Party B: Xueji WANG, a Chinese citizen with Identification No.: *****; and

Party C: Hangzhou Tuya Technology Co., Ltd., a limited liability company organized and existing under the laws of the PRC, with its address at Room 602, Tower 1, Huace Center, Sandun Town, Hangzhou.

In this Agreement, Party A, Party B, and Party C shall each be referred to as a "Party" respectively, and they shall be collectively referred to as the "Parties."

Whereas:

Party B is a shareholder of Party C and as of the date hereof holds 60.69% of the equity interests of Party C.

The Parties are parties to that certain Exclusive Option Agreement dated as of December 23, 2014 and Amended and Restated Exclusive Option Agreement dated as of August 23, 2019 (collectively referred to as the "Original Agreement").

The Original Agreement provided that any amendments, changes, and supplements to the Original Agreement shall require the execution of a written agreement by all of the Parties.

The Parties desire to enter into this Agreement in order to amend, restate and replace in its entirety the rights and obligations under the Prior Agreement with the rights and obligations provided in this Agreement.

After mutual discussions and negotiations, the Parties have now reached the following agreement:

1. Sale and Purchase of Equity Interest

1.1 Option Granted

In consideration of the payment of RMB1.00 by Party A, the receipt and adequacy of which is hereby acknowledged by Party B, Party B hereby irrevocably grants Party A a binding and exclusive right to purchase, or designate one or more persons (each, a "Designee") to purchase the equity interests in Party C then held by Party B at once or at multiple times at any time in part or in whole at Party A's sole and absolute discretion to the extent permitted by Chinese laws and at the price described in Section 1.3 herein (such right being the "Equity Interest Purchase Option"). Except for Party A and the Designee(s), no other person shall be entitled to the Equity Interest Purchase Option or other rights with respect to the equity interests of Party B. Party C hereby agrees to the grant by Party B of the Equity Interest Purchase Option to Party A. The term "person" as used herein shall refer to individuals, corporations, partnerships, partners, enterprises, trusts, or non-corporate organizations.

1.2 Steps for Exercise of the Equity Interest Purchase Option

Subject to the provisions of the laws and regulations of China, Party A may exercise the Equity Interest Purchase Option by issuing a written notice to Party B (the "Equity Interest Purchase Option Notice"), specifying: (a) Party A's or the Designee's decision to exercise the Equity Interest Purchase Option; (b) the portion of equity interests to be purchased by Party A or the Designee from Party B (the

"Optioned Interests"); and (c) the date for purchasing the Optioned Interests or the date for transfer of the Optioned Interests.

1.3 Equity Interest Purchase Price

The purchase price of the Optioned Interests (the "Base Price") shall be RMB1.00. If PRC law requires a minimum price higher than the Base Price when Party A exercises the Equity Interest Purchase Option, the minimum price regulated by PRC law shall be the purchase price (collectively, the "Equity Interest Purchase Price").

1.4 Transfer of Optioned Interests

For each exercise of the Equity Interest Purchase Option:

1.4.1 Party B shall cause Party C to promptly convene a shareholders' meeting, at which a resolution shall be adopted approving Party B's transfer of the Optioned Interests to Party A and/or the Designee(s);

1.4.2 Party B shall obtain written statements from the other shareholders of Party C giving consent to the transfer of the equity interest to Party A and/or the Designee(s) and waiving any right of first refusal related thereto;

1.4.3 Party B shall execute an equity interest transfer contract with respect to each transfer with Party A and/or each Designee (whichever is applicable), in accordance with the provisions of this Agreement and the Equity Interest Purchase Option Notice regarding the Optioned Interests;

1.4.4 The relevant Parties shall execute all other necessary contracts, agreements, or documents, obtain all necessary government licenses and permits, and take all necessary actions to transfer the valid ownership of the Optioned Interests to Party A and/or the Designee(s), unencumbered by any security interests, and cause Party A and/or the Designee(s) to become the registered owner(s) of the Optioned Interests. For the purpose of this Section and this Agreement, "security interests" shall include securities, mortgages, third party's rights or interests, any stock options, acquisition right, right of first refusal, right to offset, ownership retention, or other security arrangements, but shall be deemed to exclude any security interest created by this Agreement, Party B's Equity Interest Pledge Agreement, and Party B's Power of Attorney. "Party B's Equity Interest Pledge Agreement" as used in this Agreement shall refer to the Interest Pledge Agreement executed by and among Party A, Party B and Party C on the date hereof and any modifications, amendments, and restatements thereto. "Party B's Power of Attorney" as used in this Agreement shall refer to the Power of Attorney executed by Party B on the date hereof granting Party A with a power of attorney and any modifications, amendments, and restatements thereto.

1.5 Asset Purchase Option

Party C hereby grants to Party A an irrevocable and exclusive option to have Party A or its Designee to purchase from Party C, at Party A's sole discretion, at any time and in accordance with the procedures decided by Party A in its sole discretion, any or all of the assets of Party C, to the extent permitted under PRC law, and at the lowest purchase price permitted by PRC law. The Parties shall then enter into a separate assets transfer agreement, specifying the terms and conditions of the transfer of the assets.

1.6 Party B and Party C agree that when Party A or a third party designated by Party A exercises the Equity Interest Purchase Option or the Asset Purchase Option under Section 1.5 herein, all the consideration received by Party B and Party C for this purpose will be fully returned to Party A or a third party designated by Party A upon the request of Party A, provided that the then prevailing rules and requirements in the PRC laws are complied with.

2. Covenants

2.1 Covenants regarding Party C

Party B (as a shareholder of Party C) and Party C hereby covenant on the following:

2.1.1 Without the prior written consent of Party A, they shall not in any manner supplement, change, or amend the articles of association of Party C, increase or decrease its registered capital, or change its structure of registered capital in other manners;

2.1.2 They shall maintain Party C's corporate existence in accordance with good financial and business standards and practices, as well as obtain and maintain all necessary government licenses and permits by prudently and effectively operating its business and handling its affairs. Without the prior written consent of Party A, Party C shall not change the principal business or significantly adjust the business scope, model, profiting model, marketing strategies, operating policy or relationship with customers;

2.1.3 Without the prior written consent of Party A, they shall not at any time following the date hereof, sell, transfer, mortgage, or dispose of in any manner any material assets of Party C or legal or beneficial interest in the material business or revenues of Party C of more than RMB500,000, or allow the encumbrance thereon of any security interests;

2.1.4 Without the prior written consent of Party A, they shall not incur, inherit, guarantee, or suffer the existence of any debt, except for payables incurred in the ordinary course of business other than through loans;

2.1.5 They shall always operate all of Party C's businesses within the normal

business scope to maintain the asset value of Party C and refrain from any action/omission that may affect Party C's operating status and asset value;

2.1.6 Without the prior written consent of Party A, they shall not cause Party C to execute any major contract or execute any other contracts, agreements or arrangements that contradicts with this Agreement or may prejudice the interests of Party A hereunder, except the contracts in the ordinary course of business (for the purpose of this subsection, a contract with a price exceeding RMB500,000 shall be deemed a major contract);

2.1.7 Without the prior written consent of Party A, they shall not cause Party C to provide any person with a loan or credit;

2.1.8 They shall provide Party A with information on Party C's business operations and financial condition at Party A's request;

2.1.9 If requested by Party A, they shall procure and maintain insurance in respect of Party C's assets and business from an insurance carrier acceptable to Party A, at an amount and type of coverage typical for companies that operate similar businesses;

2.1.10 Without the prior written consent of Party A, they shall not cause or permit Party C to merge, consolidate with, acquire, or invest in any person;

2.1.11 They shall immediately notify Party A of the occurrence or possible occurrence of any litigation, arbitration, or administrative proceedings relating to Party C's assets, business, or revenue;

2.1.12 To maintain the ownership by Party C of all of its assets, they shall execute all necessary or appropriate documents, take all necessary or appropriate actions, file all necessary or appropriate complaints, and raise necessary or appropriate defenses against all claims;

2.1.13 Without the prior written consent of Party A, they shall ensure that Party C shall not in any manner distribute dividends to its shareholders, provided that upon Party A's written request, Party C shall immediately distribute all distributable profits to its shareholders;

2.1.14 At the request of Party A, they shall appoint any person designated by Party A as the director or executive director of Party C.

2.1.15 Without Party A's prior written consent, they shall not engage in any business in competition with Party A or its affiliates; and

2.1.16 Unless otherwise required by PRC law, Party C shall not be dissolved or liquated without prior written consent by Party A. When Party C is liquated or dissolved for various reasons, Party B and Party C shall appoint the persons recommended by Party A as permitted by the PRC laws to establish a liquidation team to manage the assets of Party C.

2.1.17 Party A is entitled to offer advice and requests on the election or appointment of Directors and management members, the engagement and dismissal of employees, daily operation and management, financial management system and other matters to Party C from time to time. Party C shall strictly follow and implement the advice and requests, and Party B and Party C will adopt all necessary internal and external procedures to achieve the purpose above in accordance with the requirements of laws, the articles and this Agreement.

2.1.18 Party A is entitled to verify the accounts of Party C on a regular basis and at any time. Party C shall keep the accounts timely and accurately and provide its accounts to Party A upon its request. Within the valid term of this Agreement and without violating the applicable laws, Party C agrees to

coordinate with Party A and its shareholders (including directly or indirectly) to carry out the audit (including but not limited to the audit for connected transactions and other types of audits), to provide Party A and its shareholders and/or its entrusted auditor with the information and materials relating to the operation, businesses, customers, finance and employees of Party B and its subsidiaries, and agrees the disclosure of the information and materials by the shareholders of Party A to meet the security regulatory requirements where Party A is listed.

2.1.19 Without the prior written consent of Party A, Party B and Party C will not engage in any transaction which may materially affect the assets, obligations, rights or company operation of Party C. When any circumstance that has or may have significant adverse impacts on the business and operation of Party C occurs, Party C shall and Party B shall procure Party C to inform Party A, and shall use the best endeavors to prevent the occurrence of such circumstances and/or the increase of losses.

2.1.20 They shall strictly abide by the provisions of this Agreement and other agreements jointly or separately executed by and among Party B, Party C and Party A, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof or the interests of Party A hereunder and thereunder. Party C shall not execute with any third party, any partnership or joint operation or profit sharing arrangements, or other arrangements to transfer interests or share profits in the form of royalties, service fee or consulting fee.

2.1.21 Party B and Party C shall not cause Party B or Party C to have conflicts of interest with Party A and its shareholders in the manner of action or omission. If there are conflicts of interest (Party A has the right to unilaterally determine whether such conflicts of interest arise), Party B and Party C shall take measures as timely as possible to eliminate the conflicts with the consent of Party A or its designated persons.

2.2 Covenants of Party B

Party B hereby covenants to the following:

2.2.1 Without the prior written consent of Party A, Party B shall not sell, transfer, mortgage, or dispose of in any other manner any legal or beneficial interest in the equity interests in Party C held by Party B, or allow the encumbrance thereon, except for the interest placed in accordance with Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney;

2.2.2 Without the prior written consent of Party A, Party B shall cause the shareholders' meeting and/or the directors (or the executive director) of Party C not to approve any sale, transfer, mortgage, or disposition in any other manner of any legal or beneficial interest in the equity interests in Party C held by Party B, or allow the encumbrance thereon of any security interest, except for the interest placed in accordance with Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney;

2.2.3 Without the prior written consent of Party A, Party B shall cause the shareholders' meeting or the directors (or the executive director) of Party C not to approve the merger or consolidation with any person, or the acquisition of or investment in any person;

2.2.4 Party B shall immediately notify Party A of the occurrence or possible occurrence of any litigation, arbitration, or administrative proceedings relating to the equity interests in Party C held by Party B;

2.2.5 Party B shall cause the shareholders' meeting or the directors (or the executive director) of Party C to vote their approval of the transfer of the Optioned Interests as set forth in this Agreement and/or perform the obligations under Section 1.5 herein and to take any and all other actions that may be requested by Party A;

2.2.6 To the extent necessary to maintain Party B's ownership in Party C, Party B shall execute all necessary or appropriate documents, take all necessary or appropriate actions, file all necessary or appropriate complaints, and raise necessary or appropriate defenses against all claims;

2.2.7 Party B shall appoint any designee of Party A as the director or the executive director of Party C, at the request of Party A;

2.2.8 Party B hereby waives its right of first refusal in regards to the transfer of equity interest by any other shareholder of Party C to Party A (if any), and gives consent to the execution by each other shareholder of Party C with Party A and Party C the exclusive option agreement, the equity interest pledge agreement and the power of attorney similar to this Agreement, Party B's Equity Interest Pledge Agreement, and Party B's Power of Attorney, and accepts not to take any actions in conflict with such documents executed by the other shareholders;

2.2.9 Party B shall promptly donate any profits, interests, dividends, or proceeds of liquidation to Party A or any other person designated by Party A to the extent permitted under the applicable PRC laws; and

2.2.10 Party B shall strictly abide by the provisions of this Agreement and other contracts jointly or separately executed by and among Party B, Party C, and Party A, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof. To the extent that Party B has any remaining rights with respect to the equity interests subject to this Agreement hereunder or under Party B's Equity Interest Pledge Agreement or under Party B's Power of Attorney, Party B shall not exercise such rights except in accordance with the written instructions of Party A.

2.2.11 Party B shall refrain from any action/omission that may cause the reputation

of Party C to be adversely affected.

3 Representations and Warranties

Party B and Party C hereby represent and warrant to Party A, jointly and severally, as of the date of this Agreement and each date of transfer of the Optioned Interests, that:

3.1 They have the power, capacity, and authority to execute and deliver this Agreement and any equity interest transfer contracts to which they are parties concerning the Optioned Interests to be transferred thereunder or the Asset Purchase Option under Section 1.5 herein (each, a "Transfer Contract"), and to perform their obligations under this Agreement and any Transfer Contracts. Party B and Party C agree to enter into Transfer Contracts consistent with the terms of this Agreement upon Party A's exercise of the Equity Interest Purchase Option or the Asset Purchase Option under Section 1.5 herein. Without violating the PRC laws, this Agreement and the Transfer Contracts to which they are parties constitute or will constitute their legal, valid, and binding obligations, and shall be enforceable against them in accordance with the provisions thereof;

3.2 Party B and Party C have obtained any and all approvals and consents from the relevant government authorities and third parties (if required) for the execution, delivery, and performance of this Agreement.

3.3 The execution and delivery of this Agreement or any Transfer Contracts and the obligations under this Agreement or any Transfer Contracts shall not: (i) cause any violations of any applicable PRC laws (excluding Section 2.1.16 and Section 5.2 herein); (ii) be inconsistent with the articles of association, bylaws, or other organizational documents of Party C; (iii) cause the violation of any contracts or instruments to which they are a party or which are binding on them, or constitute any

breach under any contracts or instruments to which they are a party or which are binding on them; (iv) cause any violation of any condition for the grant and/or continued effectiveness of any licenses or permits issued to either of them; or (v) cause the suspension or revocation of or imposition of additional conditions to any licenses or permits issued to either of them;

3.4 Party B has a good and merchantable title to the equity interests held by Party B in Party C. Except for Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney, Party B has not placed any security interest on such equity interests;

3.5 Party C has a good and merchantable title to all of its assets, and has not placed any security interest on the aforementioned assets;

3.6 Party C does not have any outstanding debts, except for (i) debt incurred within its normal business scope; and (ii) debts disclosed to Party A for which Party A's written consent has been obtained.

3.7 Party C has complied with all laws and regulations of China applicable to asset acquisitions; and

3.8 There are no pending or threatened litigation, arbitration, or administrative proceedings relating to the equity interests in Party C, assets of Party C, or Party C.

4 Effective Date and Term

This Agreement shall become effective upon execution by the Parties, and remain in effect until all equity interests held by Party B in Party C have been transferred or assigned to Party A and/or any other person designated by Party A in accordance with this Agreement.

5. Governing Law and Dispute Resolution

5.1 Governing Law

The execution, effectiveness, construction, performance, amendment, and termination of this Agreement as well as any dispute resolution hereunder shall be governed by the laws of the PRC.

5.2 Methods of Dispute Resolution

In the event of any dispute arising with respect to the construction and performance of this Agreement, the Parties shall first attempt to resolve the dispute through friendly negotiations. In the event that the Parties fail to reach an agreement on the dispute within 30 days after either Party's request to the other Parties for dispute resolution through negotiations, either Party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration, in accordance with its arbitration rules. The arbitration shall be conducted in Shanghai, and the arbitration award shall be final and binding to all Parties. Subject to the provisions of the laws of China, the arbitrator may impose restrictions on and/or dispose of Party C's equity interests or land and other assets (such as for award of remedies), grant injunction (such as for the conduct of business or compelling the transfer of assets) or grant other interim relief, or order winding up of Party C through arbitration. The Parties agree that, subject to the provisions of the laws of China, pending the formation of the arbitration tribunal or in appropriate cases, the courts with jurisdiction (including the courts in Hong Kong, the place of incorporation of the listed company associated with Party A, the place of incorporation of Party C and the place where the principal assets of listed company associated with Party A or Party C are located) have the right to grant interim relief in support of the arbitration. The validity of this Section shall not be subject to any change, cancellation or termination of this Agreement. After the arbitral award takes effect, either Party shall have the right to apply to the said courts with jurisdiction for enforcement of the arbitral award.

6. Taxes and Fees

Each Party shall pay any and all transfer and registration taxes, expenses, and fees incurred thereby or levied thereon in accordance with the laws of China in connection with the preparation and execution of this Agreement and the Transfer Contracts, as well as the consummation of the transactions contemplated under this Agreement and the Transfer Contracts.

7. Notices

7.1 All notices and other communications required or permitted to be given pursuant to this Agreement shall be delivered personally or sent by registered mail, prepaid postage, commercial courier services, or facsimile transmission to the address of such Party set forth below. A confirmation copy of each notice shall also be sent by email. The dates on which notices shall be deemed to have been effectively given shall be determined as follows:

7.1.1 Notices given by personal delivery, courier services, registered mail, or prepaid postage shall be deemed effectively given on the date of receipt or refusal at the address specified for such notices;

7.1.2 Notices given by facsimile transmission shall be deemed effectively given on the date of successful transmission (as evidenced by an automatically generated confirmation of the transmission).

7.2 For the purpose of notices, the addresses of the Parties are as follows:

Party A: Hangzhou Tuya Information Technology Co., Ltd.
Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou
Attn: Liaohan CHEN

Party B: Xueji WANG

Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou

Party C: Hangzhou Tuya Technology Co., Ltd.
Address: Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou
Attn: Liaohan CHEN

7.3 Any Party may at any time change its address for notices by having a notice delivered to the other Parties in accordance with the terms hereof.

8. Confidentiality

The Parties acknowledge that the existence and the terms of this Agreement, and any oral or written information exchanged between the Parties in connection with the preparation and performance of this Agreement are regarded as confidential information. Each Party shall maintain the confidentiality of all such confidential information, and without obtaining the written consent of other Parties, it shall not disclose any relevant confidential information to any third parties, except for the information that: (a) is or will be featured in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, rules of any stock exchange, or orders of the court or other government authorities; or (c) is required to be disclosed by any Party to its shareholders, directors, employees, legal counsels, or financial advisors regarding the transaction contemplated hereunder, provided that such shareholders, directors, employees, legal counsels, or financial advisors shall be bound by the confidential obligations similar to those set forth in this Section. Disclosure of any confidential information by the shareholders, director, employees of, or agencies engaged by any Party shall be deemed disclosure of such confidential information by such Party and that Party shall be held liable for breach of this Agreement.

9. Further Warranties

The Parties agree to promptly execute the documents that are reasonably required for or are conducive to the implementation of the provisions and purposes of this Agreement and to take further actions that are reasonably required for or are conducive to the implementation of the provisions and purposes of this Agreement.

10. Breach of Agreement

10.1 If Party B or Party C conducts any material breach of any term of this Agreement, Party A shall have right to terminate this Agreement and/or require Party B or Party C to compensate all damages; this Section 10 shall not prejudice any other rights of Party A herein;

10.2 Party B or Party C shall not have any right to terminate this Agreement in any event unless otherwise required by the applicable laws.

6. Miscellaneous

11.1 Amendments, changes, and supplements

Any amendments, changes, and supplements to this Agreement shall require the execution of a written agreement by all of the Parties. To the extent that it is reasonably practicable and not in violation of the laws of China, the Parties hereto shall modify this Agreement in relation to the laws, regulations or regulatory opinions issued by the regulatory authorities in the place where the controlling shareholder of Party A is listed so that this Agreement meets the relevant requirements, if necessary.

11.2 Entire agreement

Except for the amendments, supplements, or changes in writing executed after the execution of this Agreement, this Agreement shall constitute the entire agreement

reached by and among the Parties hereto with respect to the subject matter hereof, and shall supersede all prior oral and written consultations, representations, and contracts reached with respect to the subject matter of this Agreement.

11.3 Headings

The headings of this Agreement are for convenience only, and shall not be used to interpret, explain, or otherwise affect the meanings of the provisions of this Agreement.

11.4 Language

This Agreement is written in both Chinese and English, and contains three copies, with each Party having one copy. The Chinese version and English version shall have equal legal validity.

11.5 Severability

In the event that one or several of the provisions of this Agreement are found to be invalid, illegal, or unenforceable in any aspect in accordance with any laws or regulations, the validity, legality, or enforceability of the remaining provisions of this Agreement shall not be affected or compromised in any respect. The Parties shall strive in good faith to replace such invalid, illegal, or unenforceable provisions with effective provisions that accomplish to the greatest extent permitted by the relevant laws and the intentions of the Parties, and the economic effect of such effective provisions shall be as close as possible to the economic effect of those invalid, illegal, or unenforceable provisions.

11.6 Successors

This Agreement shall be binding on and shall inure to the interest of the respective successors of the Parties and the permitted assigns of such Parties. Where Party B has other circumstances that may affect Party B's exercise of its rights as a shareholder of Party C (including but not limited to death, incapacity, marriage, divorce, bankruptcy, etc.), any successors or agents of Party B shall cooperate with other parties to this Agreement to make all arrangements deemed necessary and sign all documents deemed necessary so that such successors or agents will not damage or hinder the performance of this Agreement.

11.7 Survival

11.7.1 Any obligations that occur or are due as a result of this Agreement upon the expiration or early termination of this Agreement shall survive the expiration or early termination thereof.

11.7.2 The provisions of Sections 5, 8, 10, and this Section 11.7 shall survive the termination of this Agreement.

11.8 Waivers

Any Party may waive the terms and conditions of this Agreement, provided that such a waiver must be provided in writing and shall require the signatures of the Parties. No waiver by any Party in certain circumstances with respect to a breach by other Parties shall operate as a waiver by such a Party with respect to any similar breach in other circumstances.

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Second Amended and Restated Exclusive Option Agreement as of the date first above written.

Party A: Hangzhou Tuya Information Technology Co., Ltd.
By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party B: Xueji WANG
By:/s/ Xueji WANG

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party C: Hangzhou Tuya Technology Co., Ltd.
By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Exhibit 4.15

Amended and Restated Exclusive Option Agreement

This Amended and Restated Exclusive Option Agreement (this "Agreement") is executed by and among the following Parties as of January 19, 2022 in Hangzhou, the People's Republic of China ("China" or the "PRC"):

Party A: Hangzhou Tuya Information Technology Co., Ltd. (formerly Hangzhou Aixiangji Technology Co., Ltd.), a wholly foreign-owned enterprise, organized and existing under the laws of the PRC, with its address at Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou;

Party B: Yaona LIN, a Chinese citizen with Identification No.: *****; and

Party C: Hangzhou Tuya Technology Co., Ltd., a limited liability company organized and existing under the laws of the PRC, with its address at Room 602, Tower 1, Huace Center, Sandun Town, Hangzhou.

In this Agreement, Party A, Party B, and Party C shall each be referred to as a "Party" respectively, and they shall be collectively referred to as the "Parties."

Whereas:

Party B is a shareholder of Party C and as of the date hereof holds 11.47% of the equity interests of Party C.

The Parties are parties to that certain Exclusive Option Agreement dated as of December 23, 2014 (the "Original Agreement").

The Original Agreement provided that any amendments, changes, and supplements to the Original Agreement shall require the execution of a written agreement by all of the Parties.

The Parties desire to enter into this Agreement in order to amend, restate and replace in its entirety the rights and obligations under the Prior Agreement with the rights and obligations provided in this Agreement.

After mutual discussions and negotiations, the Parties have now reached the following agreement:

1. Sale and Purchase of Equity Interest

1.1 Option Granted

In consideration of the payment of RMB1.00 by Party A, the receipt and adequacy of which is hereby acknowledged by Party B, Party B hereby irrevocably grants Party A a binding and exclusive right to purchase, or designate one or more persons (each, a "Designee") to purchase the equity interests in Party C then held by Party B at once or at multiple times at any time in part or in whole at Party A's sole and absolute discretion to the extent permitted by Chinese laws and at the price described in Section 1.3 herein (such right being the "Equity Interest Purchase Option"). Except for Party A and the Designee(s), no other person shall be entitled to the Equity Interest Purchase Option or other rights with respect to the equity interests of Party B. Party C hereby agrees to the grant by Party B of the Equity Interest Purchase Option to Party A. The term "person" as used herein shall refer to individuals, corporations, partnerships, partners, enterprises, trusts, or non-corporate organizations.

1.2 Steps for Exercise of the Equity Interest Purchase Option

Subject to the provisions of the laws and regulations of China, Party A may exercise the Equity Interest Purchase Option by issuing a written notice to Party B (the "Equity Interest Purchase Option Notice"), specifying: (a) Party A's or the Designee's decision to exercise the Equity Interest Purchase Option; (b) the portion of equity interests to be purchased by Party A or the Designee from Party B (the

"Optioned Interests"); and (c) the date for purchasing the Optioned Interests or the date for transfer of the Optioned Interests.

1.3 Equity Interest Purchase Price

The purchase price of the Optioned Interests (the "Base Price") shall be RMB1.00. If PRC law requires a minimum price higher than the Base Price when Party A exercises the Equity Interest Purchase Option, the minimum price regulated by PRC law shall be the purchase price (collectively, the "Equity Interest Purchase Price").

1.4 Transfer of Optioned Interests

For each exercise of the Equity Interest Purchase Option:

1.4.1 Party B shall cause Party C to promptly convene a shareholders' meeting, at which a resolution shall be adopted approving Party B's transfer of the Optioned Interests to Party A and/or the Designee(s);

1.4.2 Party B shall obtain written statements from the other shareholders of Party C giving consent to the transfer of the equity interest to Party A and/or the Designee(s) and waiving any right of first refusal related thereto;

1.4.3 Party B shall execute an equity interest transfer contract with respect to each transfer with Party A and/or each Designee (whichever is applicable), in accordance with the provisions of this Agreement and the Equity Interest Purchase Option Notice regarding the Optioned Interests;

1.4.4 The relevant Parties shall execute all other necessary contracts, agreements, or documents, obtain all necessary government licenses and permits, and take all necessary actions to transfer the valid ownership of the Optioned Interests to Party A and/or the Designee(s), unencumbered by any security interests, and cause Party A and/or the Designee(s) to become the registered owner(s) of the Optioned Interests. For the purpose of this Section and this Agreement, "security interests" shall include securities, mortgages, third party's rights or interests, any stock options, acquisition right, right of first refusal, right to offset, ownership retention, or other security arrangements, but shall be deemed to exclude any security interest created by this Agreement, Party B's Equity Interest Pledge Agreement, and Party B's Power of Attorney. "Party B's Equity Interest Pledge Agreement" as used in this Agreement shall refer to the Interest Pledge Agreement executed by and among Party A, Party B and Party C on the date hereof and any modifications, amendments, and restatements thereto. "Party B's Power of Attorney" as used in this Agreement shall refer to the Power of Attorney executed by Party B on the date hereof granting Party A with a power of attorney and any modifications, amendments, and restatements thereto.

1.5 Asset Purchase Option

Party C hereby grants to Party A an irrevocable and exclusive option to have Party A or its Designee to purchase from Party C, at Party A's sole discretion, at any time and in accordance with the procedures decided by Party A in its sole discretion, any or all of the assets of Party C, to the extent permitted under PRC law, and at the lowest purchase price permitted by PRC law. The Parties shall then enter into a separate assets transfer agreement, specifying the terms and conditions of the transfer of the assets.

1.6 Party B and Party C agree that when Party A or a third party designated by Party A exercises the Equity Interest Purchase Option or the Asset Purchase Option under Section 1.5 herein, all the consideration received by Party B and Party C for this purpose will be fully returned to Party A or a third party designated by Party A upon the request of Party A, provided that the then prevailing rules and requirements in the PRC laws are complied with.

2. Covenants

2.1 Covenants regarding Party C

Party B (as a shareholder of Party C) and Party C hereby covenant on the following:

2.1.1 Without the prior written consent of Party A, they shall not in any manner supplement, change, or amend the articles of association of Party C, increase or decrease its registered capital, or change its structure of registered capital in other manners;

2.1.2 They shall maintain Party C's corporate existence in accordance with good financial and business standards and practices, as well as obtain and maintain all necessary government licenses and permits by prudently and effectively operating its business and handling its affairs. Without the prior written consent of Party A, Party C shall not change the principal business or significantly adjust the business scope, model, profiting model, marketing strategies, operating policy or relationship with customers;

2.1.3 Without the prior written consent of Party A, they shall not at any time following the date hereof, sell, transfer, mortgage, or dispose of in any manner any material assets of Party C or legal or beneficial interest in the material business or revenues of Party C of more than RMB500,000, or allow the encumbrance thereon of any security interests;

2.1.4 Without the prior written consent of Party A, they shall not incur, inherit, guarantee, or suffer the existence of any debt, except for payables incurred in the ordinary course of business other than through loans;

2.1.5 They shall always operate all of Party C's businesses within the normal

business scope to maintain the asset value of Party C and refrain from any action/omission that may affect Party C's operating status and asset value;

2.1.6 Without the prior written consent of Party A, they shall not cause Party C to execute any major contract or execute any other contracts, agreements or arrangements that contradicts with this Agreement or may prejudice the interests of Party A hereunder, except the contracts in the ordinary course of business (for the purpose of this subsection, a contract with a price exceeding RMB500,000 shall be deemed a major contract);

2.1.7 Without the prior written consent of Party A, they shall not cause Party C to provide any person with a loan or credit;

2.1.8 They shall provide Party A with information on Party C's business operations and financial condition at Party A's request;

2.1.9 If requested by Party A, they shall procure and maintain insurance in respect of Party C's assets and business from an insurance carrier acceptable to Party A, at an amount and type of coverage typical for companies that operate similar businesses;

2.1.10 Without the prior written consent of Party A, they shall not cause or permit Party C to merge, consolidate with, acquire, or invest in any person;

2.1.11 They shall immediately notify Party A of the occurrence or possible occurrence of any litigation, arbitration, or administrative proceedings relating to Party C's assets, business, or revenue;

2.1.12 To maintain the ownership by Party C of all of its assets, they shall execute all necessary or appropriate documents, take all necessary or appropriate actions, file all necessary or appropriate complaints, and raise necessary or appropriate defenses against all claims;

2.1.13 Without the prior written consent of Party A, they shall ensure that Party C shall not in any manner distribute dividends to its shareholders, provided that upon Party A's written request, Party C shall immediately distribute all distributable profits to its shareholders;

2.1.14 At the request of Party A, they shall appoint any person designated by Party A as the director or executive director of Party C.

2.1.15 Without Party A's prior written consent, they shall not engage in any business in competition with Party A or its affiliates; and

2.1.16 Unless otherwise required by PRC law, Party C shall not be dissolved or liquated without prior written consent by Party A. When Party C is liquated or dissolved for various reasons, Party B and Party C shall appoint the persons recommended by Party A as permitted by the PRC laws to establish a liquidation team to manage the assets of Party C.

2.1.17 Party A is entitled to offer advice and requests on the election or appointment of Directors and management members, the engagement and dismissal of employees, daily operation and management, financial management system and other matters to Party C from time to time. Party C shall strictly follow and implement the advice and requests, and Party B and Party C will adopt all necessary internal and external procedures to achieve the purpose above in accordance with the requirements of laws, the articles and this Agreement.

2.1.18 Party A is entitled to verify the accounts of Party C on a regular basis and at any time. Party C shall keep the accounts timely and accurately and provide its accounts to Party A upon its request. Within the valid term of this Agreement and without violating the applicable laws, Party C agrees to

coordinate with Party A and its shareholders (including directly or indirectly) to carry out the audit (including but not limited to the audit for connected transactions and other types of audits), to provide Party A and its shareholders and/or its entrusted auditor with the information and materials relating to the operation, businesses, customers, finance and employees of Party B and its subsidiaries, and agrees the disclosure of the information and materials by the shareholders of Party A to meet the security regulatory requirements where Party A is listed.

2.1.19 Without the prior written consent of Party A, Party B and Party C will not engage in any transaction which may materially affect the assets, obligations, rights or company operation of Party C. When any circumstance that has or may have significant adverse impacts on the business and operation of Party C occurs, Party C shall and Party B shall procure Party C to inform Party A, and shall use the best endeavors to prevent the occurrence of such circumstances and/or the increase of losses.

2.1.20 They shall strictly abide by the provisions of this Agreement and other agreements jointly or separately executed by and among Party B, Party C and Party A, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof or the interests of Party A hereunder and thereunder. Party C shall not execute with any third party, any partnership or joint operation or profit sharing arrangements, or other arrangements to transfer interests or share profits in the form of royalties, service fee or consulting fee.

2.1.21 Party B and Party C shall not cause Party B or Party C to have conflicts of interest with Party A and its shareholders in the manner of action or omission. If there are conflicts of interest (Party A has the right to unilaterally determine whether such conflicts of interest arise), Party B and Party C shall take measures as timely as possible to eliminate the conflicts with the consent of Party A or its designated persons.

2.2 Covenants of Party B

Party B hereby covenants to the following:

2.2.1 Without the prior written consent of Party A, Party B shall not sell, transfer, mortgage, or dispose of in any other manner any legal or beneficial interest in the equity interests in Party C held by Party B, or allow the encumbrance thereon, except for the interest placed in accordance with Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney;

2.2.2 Without the prior written consent of Party A, Party B shall cause the shareholders' meeting and/or the directors (or the executive director) of Party C not to approve any sale, transfer, mortgage, or disposition in any other manner of any legal or beneficial interest in the equity interests in Party C held by Party B, or allow the encumbrance thereon of any security interest, except for the interest placed in accordance with Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney;

2.2.3 Without the prior written consent of Party A, Party B shall cause the shareholders' meeting or the directors (or the executive director) of Party C not to approve the merger or consolidation with any person, or the acquisition of or investment in any person;

2.2.4 Party B shall immediately notify Party A of the occurrence or possible occurrence of any litigation, arbitration, or administrative proceedings relating to the equity interests in Party C held by Party B;

2.2.5 Party B shall cause the shareholders' meeting or the directors (or the executive director) of Party C to vote their approval of the transfer of the Optioned Interests as set forth in this Agreement and/or perform the obligations under Section 1.5 herein and to take any and all other actions that may be requested by Party A;

2.2.6 To the extent necessary to maintain Party B's ownership in Party C, Party B shall execute all necessary or appropriate documents, take all necessary or appropriate actions, file all necessary or appropriate complaints, and raise necessary or appropriate defenses against all claims;

2.2.7 Party B shall appoint any designee of Party A as the director or the executive director of Party C, at the request of Party A;

2.2.8 Party B hereby waives its right of first refusal in regards to the transfer of equity interest by any other shareholder of Party C to Party A (if any), and gives consent to the execution by each other shareholder of Party C with Party A and Party C the exclusive option agreement, the equity interest pledge agreement and the power of attorney similar to this Agreement, Party B's Equity Interest Pledge Agreement, and Party B's Power of Attorney, and accepts not to take any actions in conflict with such documents executed by the other shareholders;

2.2.9 Party B shall promptly donate any profits, interests, dividends, or proceeds of liquidation to Party A or any other person designated by Party A to the extent permitted under the applicable PRC laws; and

2.2.10 Party B shall strictly abide by the provisions of this Agreement and other contracts jointly or separately executed by and among Party B, Party C, and Party A, perform the obligations hereunder and thereunder, and refrain from any action/omission that may affect the effectiveness and enforceability thereof. To the extent that Party B has any remaining rights with respect to the equity interests subject to this Agreement hereunder or under Party B's Equity Interest Pledge Agreement or under Party B's Power of Attorney, Party B shall not exercise such rights except in accordance with the written instructions of Party A.

2.2.11 Party B shall refrain from any action/omission that may cause the reputation

of Party C to be adversely affected.

3. <u>Representations and Warranties</u>

Party B and Party C hereby represent and warrant to Party A, jointly and severally, as of the date of this Agreement and each date of transfer of the Optioned Interests, that:

3.1 They have the power, capacity, and authority to execute and deliver this Agreement and any equity interest transfer contracts to which they are parties concerning the Optioned Interests to be transferred thereunder or the Asset Purchase Option under Section 1.5 herein (each, a "Transfer Contract"), and to perform their obligations under this Agreement and any Transfer Contracts. Party B and Party C agree to enter into Transfer Contracts consistent with the terms of this Agreement upon Party A's exercise of the Equity Interest Purchase Option or the Asset Purchase Option under Section 1.5 herein. Without violating the PRC laws, this Agreement and the Transfer Contracts to which they are parties constitute or will constitute their legal, valid, and binding obligations, and shall be enforceable against them in accordance with the provisions thereof;

3.2 Party B and Party C have obtained any and all approvals and consents from the relevant government authorities and third parties (if required) for the execution, delivery, and performance of this Agreement.

3.3 The execution and delivery of this Agreement or any Transfer Contracts and the obligations under this Agreement or any Transfer Contracts shall not: (i) cause any violations of any applicable PRC laws (excluding Section 2.1.16 and Section 5.2 herein); (ii) be inconsistent with the articles of association, bylaws, or other organizational documents of Party C; (iii) cause the violation of any contracts or instruments to which they are a party or which are binding on them, or constitute any

breach under any contracts or instruments to which they are a party or which are binding on them; (iv) cause any violation of any condition for the grant and/or continued effectiveness of any licenses or permits issued to either of them; or (v) cause the suspension or revocation of or imposition of additional conditions to any licenses or permits issued to either of them;

3.4 Party B has a good and merchantable title to the equity interests held by Party B in Party C. Except for Party B's Equity Interest Pledge Agreement and Party B's Power of Attorney, Party B has not placed any security interest on such equity interests;

3.5 Party C has a good and merchantable title to all of its assets, and has not placed any security interest on the aforementioned assets;

3.6 Party C does not have any outstanding debts, except for (i) debt incurred within its normal business scope; and (ii) debts disclosed to Party A for which Party A's written consent has been obtained.

3.7 Party C has complied with all laws and regulations of China applicable to asset acquisitions; and

3.8 There are no pending or threatened litigation, arbitration, or administrative proceedings relating to the equity interests in Party C, assets of Party C, or Party C.

4. Effective Date and Term

This Agreement shall become effective upon execution by the Parties, and remain in effect until all equity interests held by Party B in Party C have been transferred or assigned to Party A and/or any other person designated by Party A in accordance with this Agreement.

5. Governing Law and Dispute Resolution

5.1 Governing Law

The execution, effectiveness, construction, performance, amendment, and termination of this Agreement as well as any dispute resolution hereunder shall be governed by the laws of the PRC.

5.2 Methods of Dispute Resolution

In the event of any dispute arising with respect to the construction and performance of this Agreement, the Parties shall first attempt to resolve the dispute through friendly negotiations. In the event that the Parties fail to reach an agreement on the dispute within 30 days after either Party's request to the other Parties for dispute resolution through negotiations, either Party may submit the relevant dispute to the China International Economic and Trade Arbitration Commission for arbitration, in accordance with its arbitration rules. The arbitration shall be conducted in Shanghai, and the arbitration award shall be final and binding to all Parties. Subject to the provisions of the laws of China, the arbitrator may impose restrictions on and/or dispose of Party C's equity interests or land and other assets (such as for award of remedies), grant injunction (such as for the conduct of business or compelling the transfer of assets) or grant other interim relief, or order winding up of Party C through arbitration. The Parties agree that, subject to the provisions of the laws of China, pending the formation of the arbitration tribunal or in appropriate cases, the courts with jurisdiction (including the courts in Hong Kong, the place of incorporation of the listed company associated with Party A, the place of incorporation of Party C and the place where the principal assets of listed company associated with Party A or Party C are located) have the right to grant interim relief in support of the arbitration. The validity of this Section shall not be subject to any change, cancellation or termination of this Agreement. After the arbitral award takes effect, either Party shall have the right to apply to the said courts with jurisdiction for enforcement of the arbitral award.

6. Taxes and Fees

Each Party shall pay any and all transfer and registration taxes, expenses, and fees incurred thereby or levied thereon in accordance with the laws of China in connection with the preparation and execution of this Agreement and the Transfer Contracts, as well as the consummation of the transactions contemplated under this Agreement and the Transfer Contracts.

7. Notices

7.1 All notices and other communications required or permitted to be given pursuant to this Agreement shall be delivered personally or sent by registered mail, prepaid postage, commercial courier services, or facsimile transmission to the address of such Party set forth below. A confirmation copy of each notice shall also be sent by email. The dates on which notices shall be deemed to have been effectively given shall be determined as follows:

7.1.1 Notices given by personal delivery, courier services, registered mail, or prepaid postage shall be deemed effectively given on the date of receipt or refusal at the address specified for such notices;

7.1.2 Notices given by facsimile transmission shall be deemed effectively given on the date of successful transmission (as evidenced by an automatically generated confirmation of the transmission).

7.2 For the purpose of notices, the addresses of the Parties are as follows:

Party A: Hangzhou Tuya Information Technology Co., Ltd.

Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou

Attn: Liaohan CHEN

Party B: Yaona LIN

Address: Room 701, Tower 3, Zhe Shang Cai Fu Center, Xihu District, Hangzhou

Party C: Hangzhou Tuya Technology Co., Ltd.

Address: Room 602, Tower 1, Huace Center, Sandun Town, Xihu District, Hangzhou

Attn: Liaohan CHEN

7.3 Any Party may at any time change its address for notices by having a notice delivered to the other Parties in accordance with the terms hereof.

8. Confidentiality

The Parties acknowledge that the existence and the terms of this Agreement, and any oral or written information exchanged between the Parties in connection with the preparation and performance of this Agreement are regarded as confidential information. Each Party shall maintain the confidentiality of all such confidential information, and without obtaining the written consent of other Parties, it shall not disclose any relevant confidential information to any third parties, except for the information that: (a) is or will be featured in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, rules of any stock exchange, or orders of the court or other government authorities; or (c) is required to be disclosed by any Party to its shareholders, directors, employees, legal counsels, or financial advisors regarding the transaction contemplated hereunder, provided that such shareholders, directors, employees, legal counsels, or financial advisors shall be bound by the confidential obligations similar to those set forth in this Section. Disclosure of any confidential information by the shareholders, director, employees of, or agencies engaged by any Party shall be deemed disclosure of such confidential information by such Party and that Party shall be held liable for breach of this Agreement.

9. Further Warranties

The Parties agree to promptly execute the documents that are reasonably required for or are conducive to the implementation of the provisions and purposes of this Agreement and to take further actions that are reasonably required for or are conducive to the implementation of the provisions and purposes of this Agreement.

10. Breach of Agreement

10.1 If Party B or Party C conducts any material breach of any term of this Agreement, Party A shall have right to terminate this Agreement and/or require Party B or Party C to compensate all damages; this Section 10 shall not prejudice any other rights of Party A herein;

10.2 Party B or Party C shall not have any right to terminate this Agreement in any event unless otherwise required by the applicable laws.

6. Miscellaneous

11.1 Amendments, changes, and supplements

Any amendments, changes, and supplements to this Agreement shall require the execution of a written agreement by all of the Parties. To the extent that it is reasonably practicable and not in violation of the laws of China, the Parties hereto shall modify this Agreement in relation to the laws, regulations or regulatory opinions issued by the regulatory authorities in the place where the controlling shareholder of Party A is listed so that this Agreement meets the relevant requirements, if necessary.

11.2 Entire agreement

Except for the amendments, supplements, or changes in writing executed after the execution of this Agreement, this Agreement shall constitute the entire agreement

reached by and among the Parties hereto with respect to the subject matter hereof, and shall supersede all prior oral and written consultations, representations, and contracts reached with respect to the subject matter of this Agreement.

11.3 Headings

The headings of this Agreement are for convenience only, and shall not be used to interpret, explain, or otherwise affect the meanings of the provisions of this Agreement.

11.4 Language

This Agreement is written in both Chinese and English, and contains three copies, with each Party having one copy.The Chinese version and English version shall have equal legal validity.

11.5 Severability

In the event that one or several of the provisions of this Agreement are found to be invalid, illegal, or unenforceable in any aspect in accordance with any laws or regulations, the validity, legality, or enforceability of the remaining provisions of this Agreement shall not be affected or compromised in any respect. The Parties shall strive in good faith to replace such invalid, illegal, or unenforceable provisions with effective provisions that accomplish to the greatest extent permitted by the relevant laws and the intentions of the Parties, and the economic effect of such effective provisions shall be as close as possible to the economic effect of those invalid, illegal, or unenforceable provisions.

11.6 Successors

This Agreement shall be binding on and shall inure to the interest of the respective successors of the Parties and the permitted assigns of such Parties. Where Party B has other circumstances that may affect Party B's exercise of its rights as a shareholder of Party C (including but not limited to death, incapacity, marriage, divorce, bankruptcy, etc.), any successors or agents of Party B shall cooperate with other parties to this Agreement to make all arrangements deemed necessary and sign all documents deemed necessary so that such successors or agents will not damage or hinder the performance of this Agreement.

11.7 Survival

11.7.1 Any obligations that occur or are due as a result of this Agreement upon the expiration or early termination of this Agreement shall survive the expiration or early termination thereof.

11.7.2 The provisions of Sections 5, 8, 10, and this Section 11.7 shall survive the termination of this Agreement.

11.8 Waivers

Any Party may waive the terms and conditions of this Agreement, provided that such a waiver must be provided in writing and shall require the signatures of the Parties. No waiver by any Party in certain circumstances with respect to a breach by other Parties shall operate as a waiver by such a Party with respect to any similar breach in other circumstances.

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party A: Hangzhou Tuya Information Technology Co., Ltd.

By: /s/ Liaohan CHEN

Name: Liaohan CHEN

Title: Legal Representative

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party B: Yaona LIN

By: /s/ Yaona LIN

IN WITNESS WHEREOF. The Parties have caused their authorized representatives to execute this Amended and Restated Exclusive Option Agreement as of the date first above written.

Party C: Hangzhou Tuya Technology Co., Ltd.

By: /s/ Liaohan CHEN

Name: Liaohan CHEN

Title: Legal Representative

Exhibit 4.16

Power of Attorney

I, Liaohan CHEN, a People's Republic of China ("China" or the "PRC") citizen with PRC Identification Card No.: *****, and a holder of 13.10% of the entire registered capital in Hangzhou Tuya Technology Co., Ltd. ("Hangzhou Tuya") as of the date when the Power of Attorney is executed, hereby irrevocably authorize Hangzhou Tuya Information Technology Co., Ltd. ("WFOE") to exercise the following rights relating to all equity interests held by me now and in the future in Hangzhou Tuya ("My Shareholding") during the term of this Power of Attorney:

The WFOE or its designated person(s) (including but not limited to the directors of WFOE' s shareholders and their successors and bankruptcy/winding-up administrators, and shall be Chinese citizens, but excluding any non-independent persons or persons that may cause conflicts of interest (for example, myself or my associates), hereinafter referred to as "attorney") is hereby authorized to act on my behalf as my exclusive agent and attorney with respect to all matters concerning My Shareholding, including but not limited to: 1) attending shareholders' meetings of Hangzhou Tuya and signing relevant meeting minutes/resolutions; 2) exercising all the shareholder's rights and shareholder's voting rights that I am entitled to under the relevant PRC laws and Hangzhou Tuya's Articles of Association, including but not limited to the sale, transfer, pledge, or disposition of My Shareholding in part or in whole, and acting as an agent to submit any documents required to be submitted by shareholders or directors of Hangzhou Tuya to relevant government authorities or other regulatory authorities; and 3) designating and appointing on my behalf the legal representative, directors, supervisors, chief executive officer, and other senior management members of Hangzhou Tuya.

I will provide full assistance in respect of the WFOE or the attorney to exercise the entrusted rights, including signing relevant legal documents in a timely manner when necessary (for example, to meet the requirements of the documents to be submitted for approval, registration, and filing by government departments, or the requirements of laws and regulations, regulatory documents, articles of association or instructions or orders of other government departments).

Without limiting the generality of the powers granted hereunder, the WFOE or the attorney shall have the power and authority to, on my behalf, execute all the documents I shall sign as stipulated in the Amended and Restated Exclusive Option Agreement entered into by and among myself, the WFOE, and Hangzhou Tuya on January 19, 2022 and the Amended and Restated Equity Pledge Agreement entered into by and among myself, the WFOE, and Hangzhou Tuya on January 19, 2022 (including any modifications, amendments, and restatements thereto, collectively referred to as the "Transaction Documents"), and perform the terms of the Transaction Documents.

All the actions associated with My Shareholding conducted by the WFOE or the attorney shall be deemed as my own actions, and all the documents related to My Shareholding executed by the WFOE or the attorney shall be deemed as executed by me. I hereby acknowledge and ratify those actions and/or documents by the WFOE or the attorney. I hereby confirm that under no circumstances shall the WFOE or the attorney be required to bear any responsibility or make any monetary compensation for the exercise of the above-mentioned entrusted rights, and I agree to compensate the WFOE for all losses suffered or possibly suffered due to the exercise of the entrusted rights by the designated attorney, and to protect it from damage, including but not limited to any losses caused by any third party's litigation, recovery, arbitration, claim, or administrative investigation or punishment by government authorities.

During the period that I am a shareholder of Hangzhou Tuya, this Power of Attorney shall be irrevocable and continuously effective and valid from the date of execution of this Power of Attorney.

During the term of this Power of Attorney, I hereby waive all the rights associated with My Shareholding, which have been authorized to the WFOE or the attorney through this Power of Attorney, and shall not exercise such rights by myself. In the event of my death, incapacity, marriage, divorce, bankruptcy or other circumstances that may affect my exercise of shareholding in Hangzhou Tuya, I will ensure that my heirs or transferees of shareholdings will

issue the same power of attorney as this Power of Attorney before he/she can inherit/undertake all my rights and obligations under this Power of Attorney.

I hereby undertake and guarantee that my above authorization will not cause actual or potential conflicts of interest between me and the WFOE and/or the attorney. If there is a potential conflict of interest between myself and Hangzhou Tuya and the WFOE or the overseas parent company of the WFOE or its subsidiaries, I will give priority to protect and will not harm the interests of the WFOE or the overseas parent company of the WFOE without violating relevant provisions of the PRC laws and regulations. In the case that I act as a director or senior management of the WFOE or the overseas parent company of the WFOE, I will authorize the WFOE or other directors or senior management of direct or indirect overseas parent company of the WFOE (according to the instructions of the WFOE) to exercise the rights under this Power of Attorney. I shall not sign or undertake not to sign any documents that have conflicts of interest with legal documents such as the agreements signed with the WFOE or the attorney and are being performed. I shall not cause any conflict of interest between myself and the WFOE and its shareholders by any act or omission. If such conflicts of interest arise (the WFOE has the right to unilaterally determine whether such conflicts of interest arise), I shall take measures to eliminate them as soon as possible with the consent of the WFOE or the attorney. The WFOE has the right to exercise the equity purchase rights, pledge rights and/or other rights to hold me accountable under the Transaction Documents if I refuse to take measures to eliminate conflicts of interest.

This Power of Attorney is the complete and exclusive understanding and agreement between the parties regarding the subject matter hereof and supersedes that certain Power of Attorney between the parties dated as of December 23, 2014.

During the period of this Power of Attorney, where the grant or exercise of the abovementioned power of attorney cannot be realized for any reason (except for my violation of the agreement in this Power of Attorney), each party shall immediately seek an alternative plan that is closest to the unfulfilled agreement, and sign a supplemental agreement to modify or

adjust the terms of this Power of Attorney, when necessary, to ensure that the purpose of this Power of Attorney can continue to be realized.

Matters not covered in this Power of Attorney, including but not limited to applicable laws, dispute resolution, etc., shall be subject to and interpreted in accordance with the relevant provisions in the Transaction Documents.

This Power of Attorney is written in Chinese and English. The Chinese version and English version shall have equal legal validity.

IN WITNESS WHEREOF, the Party has executed this Power of Attorney.

Liaohan CHEN

By: /s/ Liaohan CHEN
Date: January 19, 2022

Accepted by:

Hangzhou Tuya Information Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Exhibit 4.17

Power of Attorney

I, Peihong CHEN, a People's Republic of China ("China" or the "PRC") citizen with PRC Identification Card No.: *****, and a holder of 4.91% of the entire registered capital in Hangzhou Tuya Technology Co., Ltd. ("Hangzhou Tuya") as of the date when the Power of Attorney is executed, hereby irrevocably authorize Hangzhou Tuya Information Technology Co., Ltd. ("WFOE") to exercise the following rights relating to all equity interests held by me now and in the future in Hangzhou Tuya ("My Shareholding") during the term of this Power of Attorney:

The WFOE or its designated person(s) (including but not limited to the directors of WFOE' s shareholders and their successors and bankruptcy/winding-up administrators, and shall be Chinese citizens, but excluding any non-independent persons or persons that may cause conflicts of interest (for example, myself or my associates), hereinafter referred to as "attorney") is hereby authorized to act on my behalf as my exclusive agent and attorney with respect to all matters concerning My Shareholding, including but not limited to: 1) attending shareholders' meetings of Hangzhou Tuya and signing relevant meeting minutes/resolutions; 2) exercising all the shareholder's rights and shareholder's voting rights that I am entitled to under the relevant PRC laws and Hangzhou Tuya's Articles of Association, including but not limited to the sale, transfer, pledge, or disposition of My Shareholding in part or in whole, and acting as an agent to submit any documents required to be submitted by shareholders or directors of Hangzhou Tuya to relevant government authorities or other regulatory authorities; and 3) designating and appointing on my behalf the legal representative, directors, supervisors, chief executive officer, and other senior management members of Hangzhou Tuya.

I will provide full assistance in respect of the WFOE or the attorney to exercise the entrusted rights, including signing relevant legal documents in a timely manner when necessary (for example, to meet the requirements of the documents to be submitted for approval, registration, and filing by government departments, or the requirements of laws and regulations, regulatory documents, articles of association or instructions or orders of other government departments).

Without limiting the generality of the powers granted hereunder, the WFOE or the attorney shall have the power and authority to, on my behalf, execute all the documents I shall sign as stipulated in the Amended and Restated Exclusive Option Agreement entered into by and among myself, the WFOE, and Hangzhou Tuya on January 19, 2022 and the Amended and Restated Equity Pledge Agreement entered into by and among myself, the WFOE, and Hangzhou Tuya on January 19, 2022 (including any modifications, amendments, and restatements thereto, collectively referred to as the "Transaction Documents"), and perform the terms of the Transaction Documents.

All the actions associated with My Shareholding conducted by the WFOE or the attorney shall be deemed as my own actions, and all the documents related to My Shareholding executed by the WFOE or the attorney shall be deemed as executed by me. I hereby acknowledge and ratify those actions and/or documents by the WFOE or the attorney. I hereby confirm that under no circumstances shall the WFOE or the attorney be required to bear any responsibility or make any monetary compensation for the exercise of the above-mentioned entrusted rights, and I agree to compensate the WFOE for all losses suffered or possibly suffered due to the exercise of the entrusted rights by the designated attorney, and to protect it from damage, including but not limited to any losses caused by any third party's litigation, recovery, arbitration, claim, or administrative investigation or punishment by government authorities.

During the period that I am a shareholder of Hangzhou Tuya, this Power of Attorney shall be irrevocable and continuously effective and valid from the date of execution of this Power of Attorney.

During the term of this Power of Attorney, I hereby waive all the rights associated with My Shareholding, which have been authorized to the WFOE or the attorney through this Power of Attorney, and shall not exercise such rights by myself. In the event of my death, incapacity, marriage, divorce, bankruptcy or other circumstances that may affect my exercise of shareholding in Hangzhou Tuya, I will ensure that my heirs or transferees of shareholdings will

issue the same power of attorney as this Power of Attorney before he/she can inherit/undertake all my rights and obligations under this Power of Attorney.

I hereby undertake and guarantee that my above authorization will not cause actual or potential conflicts of interest between me and the WFOE and/or the attorney. If there is a potential conflict of interest between myself and Hangzhou Tuya and the WFOE or the overseas parent company of the WFOE or its subsidiaries, I will give priority to protect and will not harm the interests of the WFOE or the overseas parent company of the WFOE without violating relevant provisions of the PRC laws and regulations. In the case that I act as a director or senior management of the WFOE or the overseas parent company of the WFOE, I will authorize the WFOE or other directors or senior management of direct or indirect overseas parent company of the WFOE (according to the instructions of the WFOE) to exercise the rights under this Power of Attorney. I shall not sign or undertake not to sign any documents that have conflicts of interest with legal documents such as the agreements signed with the WFOE or the attorney and are being performed. I shall not cause any conflict of interest between myself and the WFOE and its shareholders by any act or omission. If such conflicts of interest arise (the WFOE has the right to unilaterally determine whether such conflicts of interest arise), I shall take measures to eliminate them as soon as possible with the consent of the WFOE or the attorney. The WFOE has the right to exercise the equity purchase rights, pledge rights and/or other rights to hold me accountable under the Transaction Documents if I refuse to take measures to eliminate conflicts of interest.

This Power of Attorney is the complete and exclusive understanding and agreement between the parties regarding the subject matter hereof and supersedes that certain Power of Attorney between the parties dated as of December 23, 2014.

During the period of this Power of Attorney, where the grant or exercise of the abovementioned power of attorney cannot be realized for any reason (except for my violation of the agreement in this Power of Attorney), each party shall immediately seek an alternative plan that is closest to the unfulfilled agreement, and sign a supplemental agreement to modify or

adjust the terms of this Power of Attorney, when necessary, to ensure that the purpose of this Power of Attorney can continue to be realized.

Matters not covered in this Power of Attorney, including but not limited to applicable laws, dispute resolution, etc., shall be subject to and interpreted in accordance with the relevant provisions in the Transaction Documents.

This Power of Attorney is written in Chinese and English. The Chinese version and English version shall have equal legal validity.

IN WITNESS WHEREOF, the party has executed this Power of Attorney.

Peihong CHEN

By: /s/ Peihong CHEN

Date: January 19, 2022

Accepted by:

Hangzhou Tuya Information Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Exhibit 4.18

Power of Attorney

I, Ruixin ZHOU, a People's Republic of China ("China" or the "PRC") citizen with PRC Identification Card No.: *****, and a holder of 9.83% of the entire registered capital in Hangzhou Tuya Technology Co., Ltd. ("Hangzhou Tuya") as of the date when the Power of Attorney is executed, hereby irrevocably authorize Hangzhou Tuya Information Technology Co., Ltd. ("WFOE") to exercise the following rights relating to all equity interests held by me now and in the future in Hangzhou Tuya ("My Shareholding") during the term of this Power of Attorney:

The WFOE or its designated person(s) (including but not limited to the directors of WFOE' s shareholders and their successors and bankruptcy/winding-up administrators, and shall be Chinese citizens, but excluding any non-independent persons or persons that may cause conflicts of interest (for example, myself or my associates), hereinafter referred to as "attorney") is hereby authorized to act on my behalf as my exclusive agent and attorney with respect to all matters concerning My Shareholding, including but not limited to: 1) attending shareholders' meetings of Hangzhou Tuya and signing relevant meeting minutes/resolutions; 2) exercising all the shareholder's rights and shareholder's voting rights that I am entitled to under the relevant PRC laws and Hangzhou Tuya's Articles of Association, including but not limited to the sale, transfer, pledge, or disposition of My Shareholding in part or in whole, and acting as an agent to submit any documents required to be submitted by shareholders or directors of Hangzhou Tuya to relevant government authorities or other regulatory authorities; and 3) designating and appointing on my behalf the legal representative, directors, supervisors, chief executive officer, and other senior management members of Hangzhou Tuya.

I will provide full assistance in respect of the WFOE or the attorney to exercise the entrusted rights, including signing relevant legal documents in a timely manner when necessary (for example, to meet the requirements of the documents to be submitted for approval, registration, and filing by government departments, or the requirements of laws and regulations, regulatory documents, articles of association or instructions or orders of other government departments).

Without limiting the generality of the powers granted hereunder, the WFOE or the attorney shall have the power and authority to, on my behalf, execute all the documents I shall sign as stipulated in the Amended and Restated Exclusive Option Agreement entered into by and among myself, the WFOE, and Hangzhou Tuya on January 19, 2022 and the Amended and Restated Equity Pledge Agreement entered into by and among myself, the WFOE, and Hangzhou Tuya on January 19, 2022 (including any modifications, amendments, and restatements thereto, collectively referred to as the "Transaction Documents"), and perform the terms of the Transaction Documents.

All the actions associated with My Shareholding conducted by the WFOE or the attorney shall be deemed as my own actions, and all the documents related to My Shareholding executed by the WFOE or the attorney shall be deemed as executed by me. I hereby acknowledge and ratify those actions and/or documents by the WFOE or the attorney. I hereby confirm that under no circumstances shall the WFOE or the attorney be required to bear any responsibility or make any monetary compensation for the exercise of the above-mentioned entrusted rights, and I agree to compensate the WFOE for all losses suffered or possibly suffered due to the exercise of the entrusted rights by the designated attorney, and to protect it from damage, including but not limited to any losses caused by any third party's litigation, recovery, arbitration, claim, or administrative investigation or punishment by government authorities.

During the period that I am a shareholder of Hangzhou Tuya, this Power of Attorney shall be irrevocable and continuously effective and valid from the date of execution of this Power of Attorney.

During the term of this Power of Attorney, I hereby waive all the rights associated with My Shareholding, which have been authorized to the WFOE or the attorney through this Power of Attorney, and shall not exercise such rights by myself. In the event of my death, incapacity, marriage, divorce, bankruptcy or other circumstances that may affect my exercise of shareholding in Hangzhou Tuya, I will ensure that my heirs or transferees of shareholdings will

issue the same power of attorney as this Power of Attorney before he/she can inherit/undertake all my rights and obligations under this Power of Attorney.

I hereby undertake and guarantee that my above authorization will not cause actual or potential conflicts of interest between me and the WFOE and/or the attorney. If there is a potential conflict of interest between myself and Hangzhou Tuya and the WFOE or the overseas parent company of the WFOE or its subsidiaries, I will give priority to protect and will not harm the interests of the WFOE or the overseas parent company of the WFOE without violating relevant provisions of the PRC laws and regulations. In the case that I act as a director or senior management of the WFOE or the overseas parent company of the WFOE, I will authorize the WFOE or other directors or senior management of direct or indirect overseas parent company of the WFOE (according to the instructions of the WFOE) to exercise the rights under this Power of Attorney. I shall not sign or undertake not to sign any documents that have conflicts of interest with legal documents such as the agreements signed with the WFOE or the attorney and are being performed. I shall not cause any conflict of interest between myself and the WFOE and its shareholders by any act or omission. If such conflicts of interest arise (the WFOE has the right to unilaterally determine whether such conflicts of interest arise), I shall take measures to eliminate them as soon as possible with the consent of the WFOE or the attorney. The WFOE has the right to exercise the equity purchase rights, pledge rights and/or other rights to hold me accountable under the Transaction Documents if I refuse to take measures to eliminate conflicts of interest.

This Power of Attorney is the complete and exclusive understanding and agreement between the parties regarding the subject matter hereof and supersedes that certain Power of Attorney between the parties dated as of December 23, 2014.

During the period of this Power of Attorney, where the grant or exercise of the abovementioned power of attorney cannot be realized for any reason (except for my violation of the agreement in this Power of Attorney), each party shall immediately seek an alternative plan that is closest to the unfulfilled agreement, and sign a supplemental agreement to modify or

adjust the terms of this Power of Attorney, when necessary, to ensure that the purpose of this Power of Attorney can continue to be realized.

Matters not covered in this Power of Attorney, including but not limited to applicable laws, dispute resolution, etc., shall be subject to and interpreted in accordance with the relevant provisions in the Transaction Documents.

This Power of Attorney is written in Chinese and English. The Chinese version and English version shall have equal legal validity.

IN WITNESS WHEREOF, the Party has executed this Power of Attorney.

Ruixin ZHOU

By: /s/ Ruixin ZHOU
Date: January 19, 2022

Accepted by:

Hangzhou Tuya Information Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Exhibit 4.19

Power of Attorney

I, Xueji WANG, a People's Republic of China ("China" or the "PRC") citizen with PRC Identification Card No.: *****, and a holder of 60.69% of the entire registered capital in Hangzhou Tuya Technology Co., Ltd. ("Hangzhou Tuya") as of the date when the Power of Attorney is executed, hereby irrevocably authorize Hangzhou Tuya Information Technology Co., Ltd. ("WFOE") to exercise the following rights relating to all equity interests held by me now and in the future in Hangzhou Tuya ("My Shareholding") during the term of this Power of Attorney:

The WFOE or its designated person(s) (including but not limited to the directors of WFOE' s shareholders and their successors and bankruptcy/winding-up administrators, and shall be Chinese citizens, but excluding any non-independent persons or persons that may cause conflicts of interest (for example, myself or my associates), hereinafter referred to as "attorney") is hereby authorized to act on my behalf as my exclusive agent and attorney with respect to all matters concerning My Shareholding, including but not limited to: 1) attending shareholders' meetings of Hangzhou Tuya and signing relevant meeting minutes/resolutions; 2) exercising all the shareholder's rights and shareholder's voting rights that I am entitled to under the relevant PRC laws and Hangzhou Tuya's Articles of Association, including but not limited to the sale, transfer, pledge, or disposition of My Shareholding in part or in whole, and acting as an agent to submit any documents required to be submitted by shareholders or directors of Hangzhou Tuya to relevant government authorities or other regulatory authorities; and 3) designating and appointing on my behalf the legal representative, directors, supervisors, chief executive officer, and other senior management members of Hangzhou Tuya.

I will provide full assistance in respect of the WFOE or the attorney to exercise the entrusted rights, including signing relevant legal documents in a timely manner when necessary (for example, to meet the requirements of the documents to be submitted for approval, registration, and filing by government departments, or the requirements of laws and regulations, regulatory documents, articles of association or instructions or orders of other government departments).

Without limiting the generality of the powers granted hereunder, the WFOE or the attorney shall have the power and authority to, on my behalf, execute all the documents I shall sign as stipulated in the Second Amended and Restated Exclusive Option Agreement entered into by and among myself, the WFOE, and Hangzhou Tuya on January 19, 2022 and the Second Amended and Restated Equity Pledge Agreement entered into by and among myself, the WFOE, and Hangzhou Tuya on January 19, 2022 (including any modifications, amendments, and restatements thereto, collectively referred to as the "Transaction Documents"), and perform the terms of the Transaction Documents.

All the actions associated with My Shareholding conducted by the WFOE or the attorney shall be deemed as my own actions, and all the documents related to My Shareholding executed by the WFOE or the attorney shall be deemed as executed by me. I hereby acknowledge and ratify those actions and/or documents by the WFOE or the attorney. I hereby confirm that under no circumstances shall the WFOE or the attorney be required to bear any responsibility or make any monetary compensation for the exercise of the above-mentioned entrusted rights, and I agree to compensate the WFOE for all losses suffered or possibly suffered due to the exercise of the entrusted rights by the designated attorney, and to protect it from damage, including but not limited to any losses caused by any third party's litigation, recovery, arbitration, claim, or administrative investigation or punishment by government authorities.

During the period that I am a shareholder of Hangzhou Tuya, this Power of Attorney shall be irrevocable and continuously effective and valid from the date of execution of this Power of Attorney.

During the term of this Power of Attorney, I hereby waive all the rights associated with My Shareholding, which have been authorized to the WFOE or the attorney through this Power of Attorney, and shall not exercise such rights by myself. In the event of my death, incapacity, marriage, divorce, bankruptcy or other circumstances that may affect my exercise of shareholding in Hangzhou Tuya, I will ensure that my heirs or transferees of shareholdings will

issue the same power of attorney as this Power of Attorney before he/she can inherit/undertake all my rights and obligations under this Power of Attorney.

I hereby undertake and guarantee that my above authorization will not cause actual or potential conflicts of interest between me and the WFOE and/or the attorney. If there is a potential conflict of interest between myself and Hangzhou Tuya and the WFOE or the overseas parent company of the WFOE or its subsidiaries, I will give priority to protect and will not harm the interests of the WFOE or the overseas parent company of the WFOE without violating relevant provisions of the PRC laws and regulations. In the case that I act as a director or senior management of the WFOE or the overseas parent company of the WFOE, I will authorize the WFOE or other directors or senior management of direct or indirect overseas parent company of the WFOE (according to the instructions of the WFOE) to exercise the rights under this Power of Attorney. I shall not sign or undertake not to sign any documents that have conflicts of interest with legal documents such as the agreements signed with the WFOE or the attorney and are being performed. I shall not cause any conflict of interest between myself and the WFOE and its shareholders by any act or omission. If such conflicts of interest arise (the WFOE has the right to unilaterally determine whether such conflicts of interest arise), I shall take measures to eliminate them as soon as possible with the consent of the WFOE or the attorney. The WFOE has the right to exercise the equity purchase rights, pledge rights and/or other rights to hold me accountable under the Transaction Documents if I refuse to take measures to eliminate conflicts of interest.

This Power of Attorney is the complete and exclusive understanding and agreement between the parties regarding the subject matter hereof and supersedes that certain Power of Attorney between the parties dated as of December 23, 2014 and August 23, 2019.

During the period of this Power of Attorney, where the grant or exercise of the abovementioned power of attorney cannot be realized for any reason (except for my violation of the agreement in this Power of Attorney), each party shall immediately seek an alternative plan that is closest to the unfulfilled agreement, and sign a supplemental agreement to modify or

adjust the terms of this Power of Attorney, when necessary, to ensure that the purpose of this Power of Attorney can continue to be realized.

Matters not covered in this Power of Attorney, including but not limited to applicable laws, dispute resolution, etc., shall be subject to and interpreted in accordance with the relevant provisions in the Transaction Documents.

This Power of Attorney is written in Chinese and English. The Chinese version and English version shall have equal legal validity.

IN WITNESS WHEREOF, the Party has executed this Power of Attorney.

Xueji WANG

BY: /s/ Xueji WANG
Date: January 19, 2022

Accepted by:

Hangzhou Tuya Information Technology Co., Ltd.

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Exhibit 4.20

Power of Attorney

I, Yaona LIN, a People's Republic of China ("China" or the "PRC") citizen with PRC Identification Card No.: *****, and a holder of 11.47% of the entire registered capital in Hangzhou Tuya Technology Co., Ltd. ("Hangzhou Tuya") as of the date when the Power of Attorney is executed, hereby irrevocably authorize Hangzhou Tuya Information Technology Co., Ltd. ("WFOE") to exercise the following rights relating to all equity interests held by me now and in the future in Hangzhou Tuya ("My Shareholding") during the term of this Power of Attorney:

The WFOE or its designated person(s) (including but not limited to the directors of WFOE's shareholders and their successors and bankruptcy/winding-up administrators, and shall be Chinese citizens, but excluding any non-independent persons or persons that may cause conflicts of interest (for example, myself or my associates), hereinafter referred to as "attorney") is hereby authorized to act on my behalf as my exclusive agent and attorney with respect to all matters concerning My Shareholding, including but not limited to: 1) attending shareholders' meetings of Hangzhou Tuya and signing relevant meeting minutes/resolutions; 2) exercising all the shareholder's rights and shareholder's voting rights that I am entitled to under the relevant PRC laws and Hangzhou Tuya's Articles of Association, including but not limited to the sale, transfer, pledge, or disposition of My Shareholding in part or in whole, and acting as an agent to submit any documents required to be submitted by shareholders or directors of Hangzhou Tuya to relevant government authorities or other regulatory authorities; and 3) designating and appointing on my behalf the legal representative, directors, supervisors, chief executive officer, and other senior management members of Hangzhou Tuya.

I will provide full assistance in respect of the WFOE or the attorney to exercise the entrusted rights, including signing relevant legal documents in a timely manner when necessary (for example, to meet the requirements of the documents to be submitted for approval, registration, and filing by government departments, or the requirements of laws and regulations, regulatory documents, articles of association or instructions or orders of other government departments).

Without limiting the generality of the powers granted hereunder, the WFOE or the attorney shall have the power and authority to, on my behalf, execute all the documents I shall sign as stipulated in the Amended and Restated Exclusive Option Agreement entered into by and among myself, the WFOE, and Hangzhou Tuya on January 19, 2022 and the Amended and Restated Equity Pledge Agreement entered into by and among myself, the WFOE, and Hangzhou Tuya on January 19, 2022 (including any modifications, amendments, and restatements thereto, collectively referred to as the "Transaction Documents"), and perform the terms of the Transaction Documents.

All the actions associated with My Shareholding conducted by the WFOE or the attorney shall be deemed as my own actions, and all the documents related to My Shareholding executed by the WFOE or the attorney shall be deemed as executed by me. I hereby acknowledge and ratify those actions and/or documents by the WFOE or the attorney. I hereby confirm that under no circumstances shall the WFOE or the attorney be required to bear any responsibility or make any monetary compensation for the exercise of the above-mentioned entrusted rights, and I agree to compensate the WFOE for all losses suffered or possibly suffered due to the exercise of the entrusted rights by the designated attorney, and to protect it from damage, including but not limited to any losses caused by any third party's litigation, recovery, arbitration, claim, or administrative investigation or punishment by government authorities.

During the period that I am a shareholder of Hangzhou Tuya, this Power of Attorney shall be irrevocable and continuously effective and valid from the date of execution of this Power of Attorney.

During the term of this Power of Attorney, I hereby waive all the rights associated with My Shareholding, which have been authorized to the WFOE or the attorney through this Power of Attorney, and shall not exercise such rights by myself. In the event of my death, incapacity, marriage, divorce, bankruptcy or other circumstances that may affect my exercise of shareholding in Hangzhou Tuya, I will ensure that my heirs or transferees of shareholdings will

issue the same power of attorney as this Power of Attorney before he/she can inherit/undertake all my rights and obligations under this Power of Attorney.

I hereby undertake and guarantee that my above authorization will not cause actual or potential conflicts of interest between me and the WFOE and/or the attorney. If there is a potential conflict of interest between myself and Hangzhou Tuya and the WFOE or the overseas parent company of the WFOE or its subsidiaries, I will give priority to protect and will not harm the interests of the WFOE or the overseas parent company of the WFOE without violating relevant provisions of the PRC laws and regulations. In the case that I act as a director or senior management of the WFOE or the overseas parent company of the WFOE, I will authorize the WFOE or other directors or senior management of direct or indirect overseas parent company of the WFOE (according to the instructions of the WFOE) to exercise the rights under this Power of Attorney. I shall not sign or undertake not to sign any documents that have conflicts of interest with legal documents such as the agreements signed with the WFOE or the attorney and are being performed. I shall not cause any conflict of interest between myself and the WFOE and its shareholders by any act or omission. If such conflicts of interest arise (the WFOE has the right to unilaterally determine whether such conflicts of interest arise), I shall take measures to eliminate them as soon as possible with the consent of the WFOE or the attorney. The WFOE has the right to exercise the equity purchase rights, pledge rights and/or other rights to hold me accountable under the Transaction Documents if I refuse to take measures to eliminate conflicts of interest.

This Power of Attorney is the complete and exclusive understanding and agreement between the parties regarding the subject matter hereof and supersedes that certain Power of Attorney between the parties dated as of December 23, 2014.

During the period of this Power of Attorney, where the grant or exercise of the abovementioned power of attorney cannot be realized for any reason (except for my violation of the agreement in this Power of Attorney), each party shall immediately seek an alternative plan that is closest to the unfulfilled agreement, and sign a supplemental agreement to modify or

adjust the terms of this Power of Attorney, when necessary, to ensure that the purpose of this Power of Attorney can continue to be realized.

Matters not covered in this Power of Attorney, including but not limited to applicable laws, dispute resolution, etc., shall be subject to and interpreted in accordance with the relevant provisions in the Transaction Documents.

This Power of Attorney is written in Chinese and English. The Chinese version and English version shall have equal legal validity.

IN WITNESS WHEREOF, the Party has executed this Power of Attorney.

Yaona LIN

By: /s/ Yaona LIN
Date: January 19, 2022

Accepted by:

Hangzhou Tuya Information Technology Co., Ltd

By: /s/ Liaohan CHEN
Name: Liaohan CHEN
Title: Legal Representative

Exhibit 4.21

Spousal Consent

The undersigned, Hong CAO, a People's Republic of China ("China" or the "PRC") citizen with PRC Identification Card No.: *****, is the lawful spouse of Liaohan CHEN, a PRC citizen with PRC Identification Card No.: *****. I hereby unconditionally and irrevocably agree to the execution of the following documents (hereinafter referred to as the "**Transaction Documents**") by Liaohan CHEN on January 19, 2022, and the disposal of the equity interests of Hangzhou Tuya Technology Co., Ltd. ("Hangzhou Tuya") held by Liaohan CHEN and registered in his name according to the following documents:

(1) The Amended and Restated Equity Interest Pledge Agreement entered into with Hangzhou Tuya Information Technology Co., Ltd. (hereinafter referred to as the "**WFOE**") and Hangzhou Tuya;

(2) The Amended and Restated Exclusive Option Agreement entered into with the WFOE and Hangzhou Tuya; and

(3) The Power of Attorney executed by Liaohan CHEN.

I hereby confirm and agree that the equity interests of Hangzhou Tuya held and to be held by Liaohan CHEN are his personal property and do not constitute the marital assets of me and Liaohan CHEN, and I unconditionally and irrevocably undertake to waive any rights or interests in these assets that may be granted to me by any applicable laws, and do not make any claim in respect of these assets, including but not limited to claiming that the abovementioned interests as the marital assets of me and Liaohan CHEN or requesting to participate in the operation and management of Hangzhou Tuya. I further confirm that Liaohan CHEN is entitled to perform the Transaction Documents and further amend or terminate the Transaction Documents without the authorization or consent from me.

I hereby undertake to execute all necessary documents and take all necessary actions to ensure appropriate performance of the Transaction Documents (as may be amended from time to time).

I hereby agree and undertake that if I obtain any equity interests of Hangzhou Tuya which are held by Liaohan CHEN for any reasons, I shall be bound by the Transaction Documents and the Amended and Restated Exclusive Business Cooperation Agreement entered into between the WFOE and Hangzhou Tuya as of January 19, 2022 (the "**Exclusive Business Cooperation Agreement**") (as may be amended from time to time) and comply with the obligations thereunder as a shareholder of Hangzhou Tuya. For this purpose, upon the WFOE's request, I shall sign a series of written documents in substantially the same format and content as the Transaction Documents and the Exclusive Business Cooperation Agreement (as may be amended from time to time).

I hereby further confirm, undertake and warrant that in the event of death, bankruptcy, incapacity, divorce of Liaohan CHEN, or any circumstance that may affect the exercise of his shareholder' rights in Hangzhou Tuya, I and my heirs or other persons who may claim rights or interests in the equity interest in Hangzhou Tuya held by Liaohan CHEN will not, under any circumstances and in any way, take any action that may affect or hinder the obligations of Liaohan CHEN under the Transaction Documents and the Exclusive Business Cooperation Agreement (as may be amended from time to time).

The undertakings, confirmations, consents and authorizations given by me in this consent letter shall remain in force until terminated by the written confirmation of the WFOE. Matters not covered in this consent letter, including but not limited to applicable laws, dispute resolution, shall be subject to and interpreted in accordance with the relevant provisions in the Transaction Documents.

Hereby Confirm.

/s/ Hong CAO

Date: January 19, 2022

Exhibit 4.22

Spousal Consent

The undersigned, Xiaolei WU, a People's Republic of China ("China" or the "PRC") citizen with PRC Identification Card No.: *****, is the lawful spouse of Peihong CHEN, a PRC citizen with PRC Identification Card No.: *****. I hereby unconditionally and irrevocably agree to the execution of the following documents (hereinafter referred to as the "**Transaction Documents**") by Peihong CHEN on January 19, 2022, and the disposal of the equity interests of Hangzhou Tuya Technology Co., Ltd. ("Hangzhou Tuya") held by Peihong CHEN and registered in his name according to the following documents:

(1) The Amended and Restated Equity Interest Pledge Agreement entered into with Hangzhou Tuya Information Technology Co., Ltd. (hereinafter referred to as the "**WFOE**") and Hangzhou Tuya;

(2) The Amended and Restated Exclusive Option Agreement entered into with the WFOE and Hangzhou Tuya; and

(3) The Power of Attorney executed by Peihong CHEN.

I hereby confirm and agree that the equity interests of Hangzhou Tuya held and to be held by Peihong CHEN are his personal property and do not constitute the marital assets of me and Peihong CHEN, and I unconditionally and irrevocably undertake to waive any rights or interests in these assets that may be granted to me by any applicable laws, and do not make any claim in respect of these assets, including but not limited to claiming that the abovementioned interests as the marital assets of me and Peihong CHEN or requesting to participate in the operation and management of Hangzhou Tuya. I further confirm that Peihong CHEN is entitled to perform the Transaction Documents and further amend or terminate the Transaction Documents without the authorization or consent from me.

I hereby undertake to execute all necessary documents and take all necessary actions to ensure appropriate performance of the Transaction Documents (as may be amended from time to time).

I hereby agree and undertake that if I obtain any equity interests of Hangzhou Tuya which are held by Peihong CHEN for any reasons, I shall be bound by the Transaction Documents and the Amended and Restated Exclusive Business Cooperation Agreement entered into between the WFOE and Hangzhou Tuya as of January 19, 2022 (the "**Exclusive Business Cooperation Agreement**") (as may be amended from time to time) and comply with the obligations thereunder as a shareholder of Hangzhou Tuya. For this purpose, upon the WFOE's request, I shall sign a series of written documents in substantially the same format and content as the Transaction Documents and the Exclusive Business Cooperation Agreement (as may be amended from time to time).

I hereby further confirm, undertake and warrant that in the event of death, bankruptcy, incapacity, divorce of Peihong CHEN, or any circumstance that may affect the exercise of his shareholder' rights in Hangzhou Tuya, I and my heirs or other persons who may claim rights or interests in the equity interest in Hangzhou Tuya held by Peihong CHEN will not, under any circumstances and in any way, take any action that may affect or hinder the obligations of Peihong CHEN under the Transaction Documents and the Exclusive Business Cooperation Agreement (as may be amended from time to time).

The undertakings, confirmations, consents and authorizations given by me in this consent letter shall remain in force until terminated by the written confirmation of the WFOE. Matters not covered in this consent letter, including but not limited to applicable laws, dispute resolution, shall be subject to and interpreted in accordance with the relevant provisions in the Transaction Documents.

Hereby Confirm.

/s/ Xiaolei WU

Date: January 19, 2022

Exhibit 4.23

Spousal Consent

The undersigned, Zhiqing LV, a People's Republic of China ("China" or the "PRC") citizen with PRC Identification Card No.: *****, is the lawful spouse of Ruixin ZHOU, a PRC citizen with PRC Identification Card No.: *****. I hereby unconditionally and irrevocably agree to the execution of the following documents (hereinafter referred to as the "**Transaction Documents**") by Ruixin ZHOU on January 19, 2022, and the disposal of the equity interests of Hangzhou Tuya Technology Co., Ltd. ("Hangzhou Tuya") held by Ruixin ZHOU and registered in his name according to the following documents:

(1) The Amended and Restated Equity Interest Pledge Agreement entered into with Hangzhou Tuya Information Technology Co., Ltd. (hereinafter referred to as the "**WFOE**") and Hangzhou Tuya;

(2) The Amended and Restated Exclusive Option Agreement entered into with the WFOE and Hangzhou Tuya; and

(3) The Power of Attorney executed by Ruixin ZHOU.

I hereby confirm and agree that the equity interests of Hangzhou Tuya held and to be held by Ruixin ZHOU are his personal property and do not constitute the marital assets of me and Ruixin ZHOU, and I unconditionally and irrevocably undertake to waive any rights or interests in these assets that may be granted to me by any applicable laws, and do not make any claim in respect of these assets, including but not limited to claiming that the above- mentioned interests as the marital assets of me and Ruixin ZHOU or requesting to participate in the operation and management of Hangzhou Tuya. I further confirm that Ruixin ZHOU is entitled to perform the Transaction Documents and further amend or terminate the Transaction Documents without the authorization or consent from me.

I hereby undertake to execute all necessary documents and take all necessary actions to ensure appropriate performance of the Transaction Documents (as may be amended from time to time).

I hereby agree and undertake that if I obtain any equity interests of Hangzhou Tuya which are held by Ruixin ZHOU for any reasons, I shall be bound by the Transaction Documents and the Amended and Restated Exclusive Business Cooperation Agreement entered into between the WFOE and Hangzhou Tuya as of January 19, 2022 (the "**Exclusive Business Cooperation Agreement**") (as may be amended from time to time) and comply with the obligations thereunder as a shareholder of Hangzhou Tuya. For this purpose, upon the WFOE's request, I shall sign a series of written documents in substantially the same format and content as the Transaction Documents and the Exclusive Business Cooperation Agreement (as may be amended from time to time).

I hereby further confirm, undertake and warrant that in the event of death, bankruptcy, incapacity, divorce of Ruixin ZHOU, or any circumstance that may affect the exercise of his shareholder' rights in Hangzhou Tuya, I and my heirs or other persons who may claim rights or interests in the equity interest in Hangzhou Tuya held by Ruixin ZHOU will not, under any circumstances and in any way, take any action that may affect or hinder the obligations of Ruixin ZHOU under the Transaction Documents and the Exclusive Business Cooperation Agreement (as may be amended from time to time).

The undertakings, confirmations, consents and authorizations given by me in this consent letter shall remain in force until terminated by the written confirmation of the WFOE. Matters not covered in this consent letter, including but not limited to applicable laws, dispute resolution, shall be subject to and interpreted in accordance with the relevant provisions in the Transaction Documents.

Hereby Confirm.

/s/ Zhiqing LV

Date: January 19, 2022

Exhibit 4.24

Spousal Consent

The undersigned, Ye YE, a People's Republic of China ("China" or the "PRC") citizen with PRC Identification Card No.: *****, is the lawful spouse of Xueji WANG, a PRC citizen with PRC Identification Card No.: *****. I hereby unconditionally and irrevocably agree to the execution of the following documents (hereinafter referred to as the "**Transaction Documents**") by Xueji WANG on January 19, 2022, and the disposal of the equity interests of Hangzhou Tuya Technology Co., Ltd. ("Hangzhou Tuya") held by Xueji WANG and registered in his name according to the following documents:

(1) The Second Amended and Restated Equity Interest Pledge Agreement entered into with Hangzhou Tuya Information Technology Co., Ltd. (hereinafter referred to as the "**WFOE**") and Hangzhou Tuya;

(2) The Second Amended and Restated Exclusive Option Agreement entered into with the WFOE and Hangzhou Tuya; and

(3) The Power of Attorney executed by Xueji WANG.

I hereby confirm and agree that the equity interests of Hangzhou Tuya held and to be held by Xueji WANG are his personal property and do not constitute the marital assets of me and Xueji WANG, and I unconditionally and irrevocably undertake to waive any rights or interests in these assets that may be granted to me by any applicable laws, and do not make any claim in respect of these assets, including but not limited to claiming that the above- mentioned interests as the marital assets of me and Xueji WANG or requesting to participate in the operation and management of Hangzhou Tuya. I further confirm that Xueji WANG is entitled to perform the Transaction Documents and further amend or terminate the Transaction Documents without the authorization or consent from me.

I hereby undertake to execute all necessary documents and take all necessary actions to ensure appropriate performance of the Transaction Documents (as may be amended from time to time).

I hereby agree and undertake that if I obtain any equity interests of Hangzhou Tuya which are held by Xueji WANG for any reasons, I shall be bound by the Transaction Documents and the Amended and Restated Exclusive Business Cooperation Agreement entered into between the WFOE and Hangzhou Tuya as of January 19, 2022 (the "**Exclusive Business Cooperation Agreement**") (as may be amended from time to time) and comply with the obligations thereunder as a shareholder of Hangzhou Tuya. For this purpose, upon the WFOE's request, I shall sign a series of written documents in substantially the same format and content as the Transaction Documents and the Exclusive Business Cooperation Agreement (as may be amended from time to time).

I hereby further confirm, undertake and warrant that in the event of death, bankruptcy, incapacity, divorce of Xueji WANG, or any circumstance that may affect the exercise of his shareholder' rights in Hangzhou Tuya, I and my heirs or other persons who may claim rights or interests in the equity interest in Hangzhou Tuya held by Xueji WANG will not, under any circumstances and in any way, take any action that may affect or hinder the obligations of Xueji WANG under the Transaction Documents and the Exclusive Business Cooperation Agreement (as may be amended from time to time).

The undertakings, confirmations, consents and authorizations given by me in this consent letter shall remain in force until terminated by the written confirmation of the WFOE. Matters not covered in this consent letter, including but not limited to applicable laws, dispute resolution, shall be subject to and interpreted in accordance with the relevant provisions in the Transaction Documents.

Hereby Confirm.

/s/ Ye YE

Date: January 19, 2022

Exhibit 4.25

Spousal Consent

The undersigned, Tingting HUANG, a People's Republic of China ("China" or the "PRC") citizen with PRC Identification Card No.: *****, is the lawful spouse of Yaona LIN, a PRC citizen with PRC Identification Card No.: *****. I hereby unconditionally and irrevocably agree to the execution of the following documents (hereinafter referred to as the "**Transaction Documents**") by Yaona LIN on January 19, 2022, and the disposal of the equity interests of Hangzhou Tuya Technology Co., Ltd. ("Hangzhou Tuya") held by Yaona LIN and registered in his name according to the following documents:

(1) The Amended and Restated Equity Interest Pledge Agreement entered into with Hangzhou Tuya Information Technology Co., Ltd. (hereinafter referred to as the "**WFOE**") and Hangzhou Tuya;

(2) The Amended and Restated Exclusive Option Agreement entered into with the WFOE and Hangzhou Tuya; and

(3) The Power of Attorney executed by Yaona LIN.

I hereby confirm and agree that the equity interests of Hangzhou Tuya held and to be held by Yaona LIN are his personal property and do not constitute the marital assets of me and Yaona LIN, and I unconditionally and irrevocably undertake to waive any rights or interests in these assets that may be granted to me by any applicable laws, and do not make any claim in respect of these assets, including but not limited to claiming that the above- mentioned interests as the marital assets of me and Yaona LIN or requesting to participate in the operation and management of Hangzhou Tuya. I further confirm that Yaona LIN is entitled to perform the Transaction Documents and further amend or terminate the Transaction Documents without the authorization or consent from me.

I hereby undertake to execute all necessary documents and take all necessary actions to ensure appropriate performance of the Transaction Documents (as may be amended from time to time).

I hereby agree and undertake that if I obtain any equity interests of Hangzhou Tuya which are held by Yaona LIN for any reasons, I shall be bound by the Transaction Documents and the Amended and Restated Exclusive Business Cooperation Agreement entered into between the WFOE and Hangzhou Tuya as of January 19, 2022 (the "**Exclusive Business Cooperation Agreement**") (as may be amended from time to time) and comply with the obligations thereunder as a shareholder of Hangzhou Tuya. For this purpose, upon the WFOE's request, I shall sign a series of written documents in substantially the same format and content as the Transaction Documents and the Exclusive Business Cooperation Agreement (as may be amended from time to time).

I hereby further confirm, undertake and warrant that in the event of death, bankruptcy, incapacity, divorce of Yaona LIN, or any circumstance that may affect the exercise of his shareholder' rights in Hangzhou Tuya, I and my heirs or other persons who may claim rights or interests in the equity interest in Hangzhou Tuya held by Yaona LIN will not, under any circumstances and in any way, take any action that may affect or hinder the obligations of Yaona LIN under the Transaction Documents and the Exclusive Business Cooperation Agreement (as may be amended from time to time).

The undertakings, confirmations, consents and authorizations given by me in this consent letter shall remain in force until terminated by the written confirmation of the WFOE. Matters not covered in this consent letter, including but not limited to applicable laws, dispute resolution, shall be subject to and interpreted in accordance with the relevant provisions in the Transaction Documents.

Hereby Confirm.

/s/ Tingting HUANG

Date: January 19, 2022

Exhibit 8.1

List of Principal Subsidiaries and Variable Interest Entity of the Registrant

Principal Subsidiaries	**Place of Incorporation**
Tuya (HK) Limited	Hong Kong
Tuya Smart Inc.	U.S.
Tuya Global Inc.	U.S.
Tuyasmart (Colombia) S.A.S	Colombia
Tuya GmbH	Germany
Tuya Japan Co., Ltd.	Japan
Tuyasmart (India) Private Limited	India
Hangzhou Tuya Information Technology Co., Ltd.	PRC
Zhejiang Tuya Smart Electronics Co., Ltd.	PRC

Variable Interest Entity	**Place of Incorporation**
Hangzhou Tuya Technology Co., Ltd.	PRC

Exhibit 12.1

Certification by the Principal Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Xueji (Jerry) Wang, certify that:

1. I have reviewed this annual report on Form 20-F of Tuya Inc. (the "Company");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;

4. The Company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the company and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Evaluated the effectiveness of the Company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (c) Disclosed in this report any change in the Company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and

5. The Company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company's auditors and the audit committee of the Company's board of directors:

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

Date: April 28, 2022

By: /s/ Xueji (Jerry) Wang
Name: Xueji (Jerry) Wang
Title: Chief Executive Officer (principal executive officer)

Exhibit 12.2

Certification by the Principal Financial Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Yao (Jessie) Liu, certify that:

1. I have reviewed this annual report on Form 20-F of Tuya Inc. (the "Company");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;

4. The Company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the company and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Evaluated the effectiveness of the Company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (c) Disclosed in this report any change in the Company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and

5. The Company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company's auditors and the audit committee of the Company's board of directors:

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

Date: April 28, 2022

By: /s/ Yao (Jessie) Liu
Name: Yao (Jessie) Liu
Title: Chief Financial Officer (principal financial officer)

Exhibit 13.1

Certification by the Principal Executive Officer
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the annual report of Tuya Inc. (the "Company") on Form 20-F for the year ended December 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Xueji (Jerry) Wang, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: April 28, 2022

By: /s/ Xueji (Jerry) Wang
Name: Xueji (Jerry) Wang
Title: Chief Executive Officer (principal executive officer)

Exhibit 13.2

Certification by the Principal Financial Officer
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

In connection with the annual report of Tuya Inc. (the "Company") on Form 20-F for the year ended December 31, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Yao (Jessie) Liu, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: April 28, 2022

By: /s/ Yao (Jessie) Liu
Name: Yao (Jessie) Liu
Title: Chief Financial Officer (principal financial officer)

Exhibit 15.1

嘉源律师事务所
JIA YUAN LAW OFFICE

北京BEIJING●上海SHANGHAI●深圳SHENZHEN●香港HONG KONG●广州GUANGZHOU●西安XI'AN

Date: April 28, 2022

Tuya Inc.

PO Box 309,
Ugland House,
Grand Cayman, KY1-1104,
Cayman Islands.

Dear Sirs/Madams,

We hereby consent to the reference to our firm in Tuya Inc.'s report on Form 20-F for the fiscal year ended December 31, 2021, which will be filed by Tuya Inc. in April 2022 with the Securities and Exchange Commission under the Securities Exchange Act of 1934.

In giving such consent, we do not thereby admit that we come within the category of persons whose consent is required under Section 7 of the Securities Act of 1933, or under the Securities Exchange Act of 1934, in each case, as amended, or the regulations promulgated thereunder.

Yours Sincerely,

/s/ Jia Yuan Law Offices

Jia Yuan Law Offices

Exhibit 15.2

Our ref KKZ/697248-000002/19042425v1

Tuya Inc.
10/F, Building A,
Huace Center, Xihu District
Hangzhou City, 310012
People's Republic of China

28 April 2022

Dear Sir or Madam

Tuya Inc.

We have acted as legal advisers as to the laws of the Cayman Islands to Tuya Inc., an exempted limited liability company incorporated in the Cayman Islands (the "**Company**"), in connection with the filing by the Company with the United States Securities and Exchange Commission (the "**SEC**") of an annual report on Form 20-F for the year ended 31 December 2021 (the "**Annual Report**").

We hereby consent to the reference to our firm under the heading "Item 10. Additional Information—E. Taxation" in the Annual Report, and we further consent to the incorporation by reference of the summary of our opinions under this heading into the Company's registration statement on Form S-8 (File No. 333-257349) that was filed on 24 June 2021, pertaining to the Company's 2015 Equity Incentive Plan.

We consent to the filing with the SEC of this consent letter as an exhibit to the Annual Report. In giving such consent, we do not thereby admit that we come within the category of persons whose consent is required under Section 7 of the Securities Act of 1933, or under the Securities Exchange Act of 1934, in each case, as amended, or the regulations promulgated thereunder.

Yours faithfully

/s/ Maples and Calder (Hong Kong) LLP

Maples and Calder (Hong Kong) LLP

Exhibit 15.3

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statement on Form S-8 (File No. 333-257349) of Tuya Inc. of our report dated April 28, 2022 relating to the financial statements, which appears in this Form 20-F.

/s/ PricewaterhouseCoopers Zhong Tian LLP

Shanghai, the People's Republic of China
April 28, 2022

Exhibit 15.4

86 21 2356 0288
86 21 2356 0299
www.cninsights.com

Date: April 28, 2022

Tuya Inc.
10/F, Building A, Huace Center
Xihu District, Hangzhou City
Zhejiang, 310012
People's Republic of China

Re: Tuya Inc.
Ladies and Gentlemen,

We understand that Tuya Inc. (the "Company") plans to file its annual report on Form 20-F for the fiscal year ended December 31, 2021 (the "Form 20-F") with the United States Securities and Exchange Commission (the "SEC").

We hereby consent to the references to our name and the inclusion of information, data and statements from our research reports and amendments thereto (collectively, the "Reports"), and any subsequent amendments to the Reports, as well as the citation of our research reports and amendments thereto, in the Form 20-F. We further hereby consent to the filing of this letter as an exhibit to the Form 20-F and any amendments thereto and as an exhibit to any other SEC Filings.

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10F, Block B, Jing'an International Center, 88 Puji Road, Jing'an District, Shanghai 200070, China

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Yours faithfully,
For and on behalf of
China Insights Industry Consultancy Limited

/s/ Leon Zhao

Name: Leon Zhao
Title/Position: Partner

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10F, Block B, Jing'an International Center, 88 Puji Road, Jing'an District, Shanghai 200070, China