

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

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____
Commission File No. 001-7784

LUMEN®

Lumen Technologies, Inc.
(Exact name of registrant as specified in its charter)

Louisiana
(State or other jurisdiction of incorporation or organization)
100 CenturyLink Drive,
Monroe, Louisiana
(Address of principal executive offices)

72-0651161
(I.R.S. Employer Identification No.)

71203
(Zip Code)

(318) 388-9000
(Registrant's telephone number, including area code)

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

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Common Stock, par value \$1.00 per share	LUMN	New York Stock Exchange
Preferred Stock Purchase Rights	N/A	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. 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 during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

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

Large Accelerated Filer Accelerated Filer Non-accelerated Filer Smaller Reporting Company
Emerging Growth Company

If an emerging growth company, 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.

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.

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

On February 21, 2023, 1,001,303,567 shares of common stock were outstanding. The aggregate market value of the voting stock held by non-affiliates as of June 30, 2022 was \$11.2 billion.

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the Registrant's Proxy Statement to be furnished in connection with the 2023 annual meeting of shareholders are incorporated by reference in Part III of this report.

Auditor Name: KPMG LLP

Auditor Location: Denver, Colorado

Auditor Firm ID: 185

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Unless the context requires otherwise, (i) references in this report on Form 10-K, for all periods presented, to "Lumen Technologies, Inc.," "Lumen Technologies" or "Lumen," "we," "us," the "Company" and "our" refer to Lumen Technologies, Inc. and its consolidated subsidiaries and (ii) references in this report to "Level 3" refer to Level 3 Parent, LLC and its predecessor, Level 3 Communications, Inc., which we acquired on November 1, 2017.

PART I

Special Note Regarding Forward-Looking Statements

This report and other documents filed by us under the federal securities law include, and future oral or written statements or press releases by us and our management may include, forward-looking statements about our business, financial condition, operating results or prospects. These "forward-looking" statements are defined by, and are subject to the "safe harbor" protections under the federal securities laws. These statements include, among others:

- forecasts of our anticipated future results of operations, cash flows or financial position;
- statements concerning the anticipated impact of our transactions, investments, product development, participation in government programs, Quantum Fiber buildout plans, and other initiatives, including synergies or costs associated with these initiatives;
- statements about our liquidity, profitability, profit margins, tax position, tax assets, tax rates, asset values, contingent liabilities, growth opportunities, growth rates, acquisition and divestiture opportunities, business prospects, regulatory and competitive outlook, market share, product capabilities, investment and expenditure plans, business strategies, securities repurchase plans, leverage, capital allocation plans, financing alternatives and sources, and pricing plans;
- statements regarding how the COVID-19 pandemic and its aftermath may impact our business, financial position, operating results or prospects; and
- other similar statements of our expectations, beliefs, future plans and strategies, anticipated developments and other matters that are not historical facts, many of which are highlighted by words such as "may," "will," "would," "could," "should," "plans," "believes," "expects," "anticipates," "estimates," "forecasts," "projects," "proposes," "targets," "intends," "likely," "seeks," "hopes," or variations or similar expressions with respect to the future.

These forward-looking statements are based upon our judgment and assumptions as of the date such statements are made concerning future developments and events, many of which are beyond our control. These forward-looking statements, and the assumptions upon which they are based, (i) are not guarantees of future results, (ii) are inherently speculative and (iii) are subject to a number of risks and uncertainties. Actual events and results may differ materially from those anticipated, estimated, projected or implied by us in those statements if one or more of these risks or uncertainties materialize, or if our underlying assumptions prove incorrect. All of our forward-looking statements are qualified in their entirety by reference below to factors that could cause our actual results to differ materially from those anticipated, estimated, projected or implied by us in those forward-looking statements. These factors include but are not limited to:

- the effects of intense competition from a wide variety of competitive providers, including decreased demand for our more mature service offerings and increased pricing pressures;
- the effects of new, emerging or competing technologies, including those that could make our products less desirable or obsolete;
- our ability to successfully and timely attain our key operating imperatives, including simplifying and consolidating our network, simplifying and automating our service support systems, attaining our Quantum Fiber buildout plans, strengthening our relationships with customers and attaining projected cost savings;

- our ability to safeguard our network, and to avoid the adverse impact of possible cyber-attacks, security breaches, service outages, system failures, or similar events impacting our network or the availability and quality of our services;
- the effects of ongoing changes in the regulation of the communications industry, including the outcome of legislative, regulatory or judicial proceedings relating to content liability standards, intercarrier compensation, universal service, service standards, broadband deployment, data protection, privacy and net neutrality;
- our ability to generate cash flows sufficient to fund our financial commitments and objectives, including our capital expenditures, operating costs, debt repayments, pension contributions and other benefits payments;
- our ability to effectively retain and hire key personnel and to successfully negotiate collective bargaining agreements on reasonable terms without work stoppages;
- changes in customer demand for our products and services, including increased demand for high-speed data transmission services;
- our ability to successfully maintain the quality and profitability of our existing product and service offerings and to introduce profitable new offerings on a timely and cost-effective basis;
- our ability to successfully and timely implement our corporate strategies, including our deleveraging and buildout strategies;
- our ability to successfully and timely consummate the pending divestiture of our European, Middle Eastern and African business, to successfully and timely realize the anticipated benefits from that divestiture and our divestitures completed in 2022, and to successfully operate and transform our retained business after such divestitures;
- changes in our operating plans, corporate strategies, or capital allocation plans, whether based upon changes in our cash flows, cash requirements, financial performance, financial position, market or regulatory conditions or otherwise;
- the impact of any future material acquisitions or divestitures that we may transact;
- the negative impact of increases in the costs of our pension, healthcare, post-employment or other benefits, including those caused by changes in markets, interest rates, mortality rates, demographics or regulations;
- the potential negative impact of customer complaints, government investigations, security breaches or service outages impacting us or our industry;
- adverse changes in our access to credit markets on favorable terms, whether caused by changes in our financial position, lower credit ratings, unstable markets or otherwise;
- our ability to meet the terms and conditions of our debt obligations and covenants, including our ability to make transfers of cash in compliance therewith;
- our ability to maintain favorable relations with our security holders, key business partners, suppliers, vendors, landlords and financial institutions;
- our ability to timely obtain necessary hardware, software, equipment, services, governmental permits and other items on favorable terms;
- our ability to meet evolving environmental, social and governance ("ESG") expectations and benchmarks, and effectively communicate and implement our ESG strategies;
- our ability to collect our receivables from, or continue to do business with, financially-troubled customers;

- our ability to continue to use or renew intellectual property used to conduct our operations;
- any adverse developments in legal or regulatory proceedings involving us;
- changes in tax, pension, healthcare or other laws or regulations, in governmental support programs, or in general government funding levels, including those arising from recently enacted legislation promoting broadband development;
- our ability to use our net operating loss carryforwards in the amounts projected;
- the effects of changes in accounting policies, practices or assumptions, including changes that could potentially require additional future impairment charges;
- continuing uncertainties regarding the impact that COVID-19 and its aftermath could have on our business, operations, cash flows and corporate initiatives;
- the effects of adverse weather, terrorism, epidemics, pandemics, rioting, vandalism, societal unrest, or other natural or man-made disasters or disturbances;
- the potential adverse effects if our internal controls over financial reporting have weaknesses or deficiencies, or otherwise fail to operate as intended;
- the effects of changes in interest rates and inflation;
- the effects of more general factors such as changes in exchange rates, in operating costs, in public policy, in the views of financial analysts, or in general market, labor, economic or geopolitical conditions; and
- other risks referenced in the "Risk Factors" section or other portions of this report or other of our filings with the U.S. Securities and Exchange Commission (the "SEC").

Additional factors or risks that we currently deem immaterial, that are not presently known to us or that arise in the future could also cause our actual results to differ materially from our expected results. Given these uncertainties, investors are cautioned not to unduly rely upon our forward-looking statements, which speak only as of the date made. We undertake no obligation to publicly update or revise any forward-looking statements for any reason, whether as a result of new information, future events or developments, changed circumstances, or otherwise. Furthermore, any information about our intentions contained in any of our forward-looking statements reflects our intentions as of the date of such forward-looking statement, and is based upon, among other things, existing regulatory, technological, industry, competitive, economic and market conditions, and our assumptions as of such date. We may change our intentions, strategies or plans (including our capital allocation plans) at any time and without notice, based upon any changes in such factors, in our assumptions or otherwise.

ITEM 1. BUSINESS

Business Overview and Purpose

We are an international facilities-based technology and communications company focused on providing our business and mass markets customers with a broad array of integrated products and services necessary to fully participate in our ever-evolving digital world. We operate one of the world's most interconnected networks. Our platform empowers our customers to swiftly adjust digital programs to meet immediate demands, create efficiencies, accelerate market access and reduce costs - allowing customers to rapidly evolve their IT programs to address dynamic changes. Our specific products and services are detailed below under the heading "Segments and Products & Services."

We conduct our operations under the following three brands:

- "Lumen," which is our flagship brand for serving the enterprise and wholesale markets
- "Quantum Fiber," which is our brand for providing fiber-based services to residential and small business customers

- "CenturyLink," which is our long-standing brand for providing mass-marketed legacy copper-based services, managed for optimal cost and efficiency.

With approximately 160,000 on-net buildings and 400,000 route miles of fiber optic cable globally, we are among the largest providers of communications services to domestic and global enterprise customers. Our terrestrial and subsea fiber optic long-haul network throughout North America, Europe and Asia Pacific connects to metropolitan fiber networks that we operate. We provide services in over 60 countries, with most of our revenue being derived in the United States ("U.S.").

As further discussed immediately below under the heading "Acquisitions and Divestitures," we sold our Latin American business and a portion of our incumbent local exchange business ("ILEC") during 2022 and have agreed to sell our business conducted in Europe, the Middle East and Africa ("EMEA").

For a discussion of certain risks applicable to our business, see "Risk Factors" in Item 1A of Part I of this report.

Acquisitions and Divestitures

General

Since being incorporated in 1968, we have grown principally through acquisitions. By 2008, we had become one of the largest providers of rural telephone services in the United States. Since then, we acquired Embarq Corporation in mid-2009, Qwest Communications International Inc. in early 2011 and Level 3 Communications, Inc. in late 2017. These acquisitions substantially changed our customer base, geographic footprint, business strategies and mix of products and services.

We regularly evaluate the possibility of acquiring additional assets or divesting assets in exchange for cash, securities or other properties, and at any given time may be engaged in discussions or negotiations regarding additional acquisitions or divestitures. We generally do not announce our acquisitions or divestitures until we have entered into a preliminary or definitive agreement.

Divestitures of the Latin American and ILEC businesses and Planned Divestiture of the EMEA Business

On August 1, 2022, affiliates of Level 3 Parent, LLC, an indirect wholly-owned subsidiary of Lumen Technologies, Inc., sold Lumen's Latin American business and on October 3, 2022, we and certain of our affiliates sold the portion of our facilities-based ILEC business primarily conducted within 20 Midwestern and Southeastern states in each case in exchange for the consideration described in Items 7 and 8 in Part II of this report.

Under agreements entered into on November 2, 2022 and February 8, 2023, affiliates of Level 3 Parent, LLC have agreed to divest certain operations in EMEA to Colt Technology Services Group Limited, a portfolio company of Fidelity Investments, in exchange for \$1.8 billion in cash, subject to certain post-closing adjustments. Level 3 Parent, LLC expects to close the transaction as early as late 2023, following receipt of all requisite regulatory approvals in the U.S. and certain countries where the EMEA business operates, as well as the satisfaction of other customary conditions.

See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business to our consolidated financial statements in Item 8 of Part II of this report for additional information on these transactions.

Financial Highlights

The following table summarizes the results of our consolidated operations:

	Years Ended December 31,		
	2022 ⁽¹⁾	2021	2020 ⁽¹⁾
	(Dollars in millions)		
Operating revenue	\$ 17,478	19,687	20,712
Operating expenses	17,383	15,402	19,750
Operating income	\$ 95	4,285	962
Net (loss) income	\$ (1,548)	2,033	(1,232)

⁽¹⁾ During 2022 and 2020, we recorded non-cash, non-tax-deductible goodwill impairment charges of \$3.3 billion and \$2.6 billion, respectively. For additional information, see Note 3—Goodwill, Customer Relationships and Other Intangible Assets to our consolidated financial statements in Item 8 of Part II of this report.

We estimate that during 2022, 2021 and 2020, approximately 8.6%, 9.4% and 8.7%, respectively, of our consolidated revenue was derived outside the U.S.

The following table summarizes certain selected financial information from our consolidated balance sheets:

	As of December 31,	
	2022	2021
	(Dollars in millions)	
Total assets	\$ 45,581	57,993
Total long-term debt ⁽¹⁾	20,572	28,982
Total stockholders' equity	10,437	11,840

⁽¹⁾ For additional information on our total long-term debt, see Note 7—Long-Term Debt and Credit Facilities to our consolidated financial statements in Item 8 of Part II of this report. For information on our total obligations, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Future Contractual Obligations" in Item 7 of Part II of this report.

The summary financial information appearing above should be read in conjunction with, and is qualified by reference to, our consolidated financial statements and notes thereto in Item 8 of Part II of this report and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of Part II of this report.

Strategy

Our over-arching strategic goal is to digitally connect people, data, and applications quickly, securely, and effortlessly. To attain this goal, we strive to, among other things:

- strengthen our digital self-service product ordering platforms;
- expand our offering of secure edge computing services;
- create a more adaptive network;
- expand our network capacity through our Quantum Fiber buildout plan and other initiatives;
- monetize our non-core assets and deliver cost-effective operations;
- manage our non-fiber business for cash; and
- strengthen our financial position and performance through debt paydown and cost reduction efforts.

Our Stakeholders

For years, one of our core tenets has been our belief that our success depends on regular communications with our stakeholders. When our new CEO, Kate Johnson, joined us in November 2022, her first major initiative was the creation of a "North Star" team, designed to further sharpen our focus on attaining our goals through relentlessly seeking input from all of our stakeholders including our investors, employees, customers, vendors, partners and our global community.

Employees and Human Capital Resources

Lumen's highly competitive business requires attracting, developing and retaining a motivated team inspired by leadership, engaged in meaningful work, motivated by career growth opportunities and thriving in a culture that embraces diversity, inclusion and belonging. Understanding and anticipating the priorities of our current and future employees is important to our future success. We aim to bring together the best mix of diverse talent to develop the brightest ideas to transform industries across the globe. At December 31, 2022, we had approximately 29,000 employees worldwide, including approximately 5,000 outside the U.S.

Attracting, Developing and Retaining Talent

Our recruiting, development and retention objectives focus on treating talent as a differentiator and a leading indicator of business performance. We strive to hire and retain the best talent available and provide outstanding opportunities for career advancement, starting with a fair and unbiased hiring process. We have implemented diverse interview panels, which include at least one woman or person of color, to minimize the potential for unconscious bias in our recruitment process. Establishing a framework of competency-based success profiles and fostering career progression through regular career development and training empowers our employees to pursue their professional goals and helps to improve employee engagement and retention. We invest in broad-based development for our employees in various ways such as skills-building programs, on-demand learning options, tuition reimbursement and tailored intern and mentoring programs, along with a suite of leadership development courses. In an effort to create more development opportunities for all employees, we are currently expanding our mentoring and leadership development programs, with added focus on development for diverse employees.

We believe we have made significant strides in attracting, engaging, and hiring a diverse group of early career employees through our internship program, our numerous sales and operations academies, and our "pathways in technology" program. We have also increased our focus on fostering internal mobility and providing more visibility and career advancement opportunities to our workforce through our internal communications platforms.

We gauge the efficacy of our programs, identify opportunities for improvement, and pursue solutions through tracking and analyzing data in a variety of ways, including conducting annual talent reviews and measuring our progress toward goals specified in our development, diversity and inclusion plans.

Diversity, Inclusion & Belonging

We believe that diversity stimulates creativity, spurs innovation and helps drive profitability, which is why we strive to create inclusive, welcoming workplaces where everyone can feel at home, be their authentic selves and thrive. Realizing greater ethnic, racial and gender diversity across all levels of an organization is, and will continue to be, an ongoing journey. Our Diversity & Inclusion Steering Committee, comprised of a cross-functional team of senior executives and led by our Chief Diversity & Inclusion Officer, oversees and champions our diversity, inclusion and belonging strategy. We aim for the highest standards of fairness and equal opportunity in recruitment, hiring, promotions, job assignments and compensation (including undertaking periodic gender and race/ethnicity pay equity studies of our U.S., non-represented employees and making pay adjustments when warranted). Inclusive recruiting and outreach programs for diverse candidates, supportive and engaging employee resource groups, and management-led listening circles are among some of Lumen's initiatives to create greater diversity and belonging among our employees.

Positive Corporate Culture

Our employees are critical to Lumen's success and we believe creating a positive, inclusive culture is essential to attracting and retaining engaged employees. We want our employees to be proud to work with us and fully engaged to share in our purpose to further human progress through technology. Lumen's company culture program incorporates a wide variety of communication and training activities encouraging collaboration among our colleagues around the world. We measure the program's efficacy and identify opportunities for improvements through an engagement survey distributed approximately every six months.

Health & Wellness

We are committed to promoting the health, safety and well-being of our employees, business partners and global communities. We want all of our employees to thrive, and we regularly re-evaluate how to best support our employees' well-being through benefits and resources. We design our current benefit and wellness programs to drive engagement that positively impacts our culture, job satisfaction, recruiting and retention programs. We offer progressive employee benefits and enhancements that recognize the diverse needs of our people and their families.

Labor Relations

At December 31, 2022, approximately 20% of our U.S. workforce was represented by a union, either the Communications Workers of America or the International Brotherhood of Electrical Workers. Employees in four countries in Europe are represented by works councils or a representative body. We recognize the critical role that our supervisors and managers play in fostering a productive and respectful work environment, and we encourage employees to work directly with their supervisors, where possible, to efficiently and effectively resolve workplace concerns. We also respect our employees' rights to voluntarily establish and join unions and similar associations without unlawful interference. We strive to work collaboratively with the unions, councils and associations that represent our workers.

Customer Success

Our customers range from individual households to global enterprises. Whether our network supports remote education to under-served communities or a multi-national work-from-home enterprise, all customers are impacted by the quality and reliability of our products and services. Understanding how each customer accesses and uses our products and services informs the type of customer engagement to best meet their expectations. One of our new CEO's top priorities after joining us in late 2022 was reshaping our senior leadership team to further increase our focus on customer engagement. Our Customer Success organization includes dedicated teams focused on building deeper relationships and providing us the opportunity to continually improve our customers' Lumen experience, including their interactions with our employees and systems. We believe a strong experience leads to satisfied customers and engaged employees who are encouraged to recommend creative solutions. We have a dedicated team responsible for evaluating the best approach to improving the experiences of customers, coupled with frequent, transparent and informative communication processes.

We highly value both customer and employee suggestions. We offer our customers several channels for communicating with us, including voice, text, email, chat and social media, among others. We are driving a digital-first culture that allows our customers to configure, order, and rapidly deploy our services through an all-digital, self-service set of tools. Since 2019, we have hosted an annual customer experience (CX) event, during which we invite customers to collaborate directly with us.

While careful listening to customers is the best source of customer experience feedback, we believe overlaying it with employee feedback is the most effective way to continuously improve. We regularly invite our front-line employees to provide feedback on opportunities to improve our capabilities.

Partners and Vendors

We seek to engage with those partners and vendors who best contribute to our customers' success. Lumen seeks to co-innovate with a comprehensive group of strategic partners to create solutions focused exclusively on our customers' business and IT requirements. Through our open and interoperable approach, we seek to identify the optimal platform for serving our customers – whether ours or a third party's. When necessary, Lumen incorporates market-leading technologies to optimize application performance and streamline integration throughout the IT stack to ensure seamless integration and interoperability. Lumen has collaborated with a host of technology partners, giving us the capability to tailor and fully manage scalable solutions that customers control. Lumen, by working with our network of technology partners, integrates different technologies to improve our products and services.

In light of these efforts to better serve our customers, we are materially reliant on a wide range of vendors to support our organization and partners to support our strategy. We work with, and rely on, other communications companies that lease us transmission capacity or sell us various services necessary for our current operations, as well as a wide range of software, hardware and equipment suppliers. We believe that co-innovating with other companies enables us to rapidly evolve our customer offerings.

Environmental Stewardship and Sustainability

Environmental stewardship is inherent to our mission and identity. We believe our commitment to environmental sustainability promotes the financial health of our business and strengthens our relations with our employees, communities, customers and investors.

In early 2022, we formed the Sustainability Management Committee ("SMC") comprised of employees from across the business. The SMC designs and oversees our company-wide sustainability program, including the monitoring of climate-related issues, and is responsible for driving the sustainability agenda with the Board and senior leadership. Additionally, our Environment, Health and Safety ("EHS") team is responsible for overseeing and implementing our EHS and environmental sustainability initiatives.

The EHS program framework focuses on seven key areas:

- **Environmental compliance and management:** The Lumen EHS team assesses and reviews our company programs, operational facilities and waste management vendors. We monitor environmental legislative activity and collaborate with other internal groups to develop documented practices and procedures that support compliance with applicable laws and regulations.
- **Energy and emissions:** In an effort to reduce our carbon footprint, we continue to identify and implement energy efficiency and greenhouse gas ("GHG") emissions reduction initiatives. As we continue to track performance against our 2025 science-based targets, we remain committed to exploring ways to reduce GHG emissions through our operational, customer and employee initiatives. In January 2021, we were among the very first U.S. companies to issue sustainability-linked bonds.
- **Water:** Lumen uses the World Resource Institute's Water Risk Atlas to assess which countries of operation face the highest risk of water stress. We strive to reduce our water consumption, especially in the water-stressed communities where we operate. We track our usage and closely monitor abnormalities to improve water efficiencies and reduce site discharge.

- **Waste:** We are committed to reusing and recycling products, minimizing material use and carefully managing our waste. Each year, we divert millions of pounds of electronic and communications equipment from landfills. We recycle telecommunications equipment, and our modem/router takeback program allows customers to return their equipment, which are then either reused or sent to an R2-certified recycler.
- **Supplier environmental assessment:** We expect our suppliers to embrace and share our commitment to compliance and sustainability efforts. As reflected in our Supplier Code of Conduct, we expect our suppliers to use reasonable efforts to employ environmentally preferred and energy-efficient services, and to work with their own suppliers to assess and address environmental and sustainability issues within their supply chains.
- **Climate preparedness:** We evaluate various climate change risks to our ongoing operations when we consider expanding our network or facilities. Our comprehensive business continuity program focuses on prevention, collaboration, communication, response and recovery to assist us in quickly resolving disruptive events. Weather events such as severe flooding and hurricanes can impact our ability to deliver services, so business resiliency and adaptability is key to the long-term viability of our business.
- **Occupational Health and Safety:** The EHS team conducts risk assessments, reviews safety incident data and monitors health and safety legislation to develop policies and procedures designed to minimize safety hazards and support compliance with applicable laws and regulations. We carry out periodic reviews to identify steps designed to improve overall safety performance.

Our Network

Our network, through which we provide most of our products and services, consists of fiber-optic and copper cables, high-speed transport equipment, electronics, voice switches, data switches, routers, and various other equipment. We operate part of our network with leased assets, and a substantial portion of our equipment with licensed software.

At December 31, 2022, our global network (owned and leased) included (i) approximately 400,000 route miles of fiber optic plant, including approximately 25,000 route miles of subsea fiber optic cable systems and (ii) multiple gateway and transmission facilities used in connection with operating our network throughout North America and Europe.

At December 31, 2022, our domestic network connected (i) approximately 160,000 on-net buildings, which we refer to as “Fiber On-net” buildings, serving our enterprise customer base and (ii) approximately 21.8 million broadband-enabled units serving our Mass Markets customer base. At December 31, 2022, approximately 3.1 million of our Mass Markets broadband-enabled units were capable of receiving services from our fiber-based infrastructure, with the remainder connected with copper-based infrastructure. Our domestic network also included at such date central office and other equipment that enables us to provide telephone service as an ILEC.

As discussed in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in Item 7 of Part II of this report and Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business to our consolidated financial statements in Item 8 of Part II of this report, we sold portions of our network during 2022 and have agreed to sell portions thereof upon receipt of various approvals.

As noted elsewhere in this report, we view our network as one of our most critical assets. We have devoted, and plan to continue to devote, substantial resources to (i) simplify and modernize our network and legacy systems and (ii) expand our network to address demand for enhanced or new products. A key element of our network expansion plan is our Quantum Fiber buildout project. Under this project, we propose over the next several years to construct additional fiber optic infrastructure to enable us to provide Quantum Fiber broadband services to several million additional urban and suburban locations in our remaining ILEC markets.

Although we own most of our network, we lease a substantial portion of our core fiber network from several other communication companies under arrangements that will periodically need to be renewed or replaced to support our current network operations.

Like other large communications companies, we are a constant target of cyber-attacks of various degrees, and, from time to time in the ordinary course of our business, we experience disruption in our services. We develop and maintain systems and programs designed to protect against cyber-attacks and network outages. The development, maintenance and operation of these systems and programs is costly and requires ongoing monitoring and updating as technologies change and efforts to bypass security measures become more sophisticated and evolve rapidly.

For additional information regarding our systems, network assets, network risks, capital expenditure requirements and reliance upon third parties, see "Risk Factors" in Item 1A of Part I of this report.

Competition

We compete in a dynamic and highly competitive market in which demand for high-speed, secure data services continues to grow. We expect continued intense competition from a wide variety of sources under these evolving market conditions. In addition to competition from large international communications providers, we are facing competition from a growing number of sources, including systems integrators, hyperscalers, cloud service providers, software networking companies, infrastructure companies, cable companies, wireless service providers, device providers, resellers and smaller niche providers.

Our ability to compete hinges upon effectively enhancing and better integrating our existing products, introducing new products on a timely and cost-effective basis, meeting changing customer needs, providing high-quality information security to build customer confidence and combat cyber-attacks, extending our core technology into new applications and anticipating emerging standards, business models, software delivery methods and other technological changes. Depending on the applicable market and services, competition can be intense, especially if competitors in the market have network assets better suited to customer needs, faster transmission speeds or lower prices, or, in certain overseas markets, are national or regional incumbent communications providers that have a longer history of providing service in the market.

We compete to provide services to business customers based on a variety of factors, including the comprehensiveness and reliability of our network, our data transmission speeds, price, the latency of our available network services, the scope of our integrated offerings, the reach and peering capacity of our IP network, and customer service. Competition from large communications providers, systems integrators, hyperscalers and others have increased pricing pressures with respect to several key products and services that we offer to our enterprise and wholesale business customers. In particular, several hyperscalers have recently built their own data transmission facilities, which has reduced demand for our network services.

Competition to provide broadband services to our mass markets customers remains high. Market demand for our broadband services could be adversely affected by (i) advanced wireless data transmission technologies, including fixed wireless and low-earth-orbit satellite services, and (ii) continued enhancements to cable-based services, each of which generally provides faster average broadband transmission speeds than our legacy copper-based infrastructure. In addition, several established or new communications companies, infrastructure companies or municipalities have built or are building new fiber-based networks to provide high-speed broadband services in existing or unserved markets, frequently with the support of governmental subsidies. Our network expansion and innovation strategy is focused largely on addressing these competitive pressures. To meet these demands and remain competitive, we are continuing to invest in network capacity, security, reliability, flexibility and design innovations, including through our Quantum Fiber buildout initiative.

For our traditional voice services, providers of wireless voice, social networking, videoconferencing and electronic messaging services are significant competitors as many customers are increasingly relying on these providers to communicate, resulting in the long-term systemic decline we have seen in our traditional voice services. Other potential sources of competition include non-carrier systems that are capable of bypassing our local networks, either partially or completely, through various means. Developments in software have permitted new competitors to offer affordable networking products that historically required more expensive hardware investment. We anticipate that all these trends will continue to place downward pressures on the use of our voice network.

Additionally, the Telecommunications Act of 1996 obligates ILECs, including those operated by us, to permit competitors to interconnect their facilities to the ILEC's network and to take various other steps that are designed to promote competition, including obligations to (i) negotiate interconnection agreements in good faith, (ii) provide nondiscriminatory "unbundled" access to specific portions of the ILEC's network and (iii) permit competitors to physically or virtually collocate their plant on the ILEC's property. As a result of the above-described regulatory and technological developments, we also face competition from competitive local exchange carriers ("CLECs"), particularly in densely populated areas. CLECs provide competing services through (i) reselling an ILEC's local services, (ii) using an ILEC's unbundled network elements, (iii) operating their own facilities or (iv) a combination thereof.

Additional information about competitive pressures is located under the heading "Risk Factors—Business Risks" in Item 1A of Part I of this report.

Sales and Marketing

Market Overview

We believe we have a comprehensive set of fiber assets that positions us to deliver a highly-competitive suite of cloud connectivity, low latency edge computing, and integrated network services.

We generally market our business services to members of in-house IT departments or other highly-sophisticated customers with deep technological experience. These individuals typically satisfy their IT requirements by contracting with us or a rapidly evolving group of competitors, or by deploying in-house solutions.

Sales Channels

Our enterprise sales and marketing approach focuses on solving complex customer problems with advanced technology and network solutions – striving to make core networks services compatible with digital tools. We also rely on our call center personnel and a variety of channel partners to promote sales of services that meet the needs of our customers. To meet the needs of different customers, our offerings include both stand-alone services and bundled services designed to provide a complete offering of integrated services.

Our business customers range from small business offices to the world's largest global enterprise customers. Our marketing plans include marketing our products and services primarily through direct sales representatives, inbound call centers, telemarketing and third parties, including telecommunications agents, system integrators, value-added resellers and other telecommunications firms. We support our distribution through digital advertising, events, television advertising, website promotions and public relations. We maintain local offices in most major and secondary markets within the U.S. and many of the primary markets of the more than 60 countries in which we provide services.

Similarly, our sales and marketing approach to our mass market customers emphasizes customer-oriented sales, marketing and service with a local presence. Our approach includes marketing our products and services primarily through direct sales representatives, inbound call centers, telemarketing and third parties, including retailers, satellite television providers, door to door sales agents and digital marketing firms.

Segments and Products & Services

We completed an internal reorganization in January 2021 to adjust our reporting segments and customer-facing sales channels to better align with operational changes designed to better support our customers. We believe the changes provide greater transparency into how we are performing against our strategy, including focusing on growth opportunities and managing declining legacy services.

Segments

We report our financial performance using two segments, as described below:

- ***Business Segment:*** Under our Business segment, we provide our products and services under four sales channels to meet the needs of our enterprise and commercial customers; and

- *Mass Markets Segment:* Under our Mass Markets segment, we provide products and services to residential and small business customers.

The following table shows the composition of our operating revenue by segment for the years ended December 31, 2022, 2021 and 2020:

	Years Ended December 31,			Percent Change	
	2022	2021	2020	2022 vs 2021	2021 vs 2020
Percentage of revenue:					
Business	75 %	72 %	71 %	3 %	1 %
Mass Markets	25 %	28 %	29 %	(3)%	(1)%
Total operating revenue	100 %	100 %	100 %		

For additional information on our segment data, including information on certain centrally-managed assets and expenses not reflected in our segment results, see Note 17—Segment Information to our consolidated financial statements in Item 8 of Part II of this report and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Reporting Segments" in Item 7 of Part II of this report.

Products & Services

At December 31, 2022, we categorized our products and services revenue among the following product categories for the Business segment:

- *Compute and Application Services*
 - *Edge Cloud Services.* We provide both public and private cloud solutions that allow our customers to optimize cost and performance by offloading workloads. Lumen's cloud products are designed to leverage our network edge to provide low-latency secure services for our customers. Additionally, we provide cloud orchestration tools that allow customers to shift work between cloud environments dynamically;
 - *IT Solutions.* We craft technology solutions for our customers and often manage these solutions on an ongoing basis. These services frequently enhance equipment or networks owned, acquired, or controlled by the customer and often include our consulting or software development services;
 - *Unified Communications and Collaboration ("UC&C").* We provide access to various unified communications platforms. This offering includes both individual, license-based service models and more robust options that transform a customer's inbound and outbound calling platform;
 - *Colocation and Data Center Services.* We provide different options for organizations' data center needs. Our data center services range from dedicated hosting and cloud services to more complex managed solutions, including disaster recovery, business continuity, applications management support and security services to manage mission critical applications;
 - *Content Delivery.* Our content delivery services provide our customers with the ability to meet their streaming video and far-reaching digital content distribution needs through our Content Delivery Network ("CDN") services and our Vyvx Broadcast Solutions; and
 - *Managed Security Services.* We provide enterprise security solutions that help our customers secure networks, mitigate malicious attacks and identify potential security threats. These services include DDoS mitigation, remote and premise-based firewalls, professional consulting and management services, and threat intelligence services.

- *IP and Data Services*
 - *Ethernet.* We deliver a robust array of networking services built on ethernet technology. Ethernet services include point-to-point and multi-point equipment configurations that facilitate data transmissions across metropolitan areas and larger enterprise-class wide area networks. Our ethernet technology is also used by wireless service providers for data transmission via our fiber-optic cables connected to their towers;
 - *Internet Protocol ("IP").* Our IP services provide global internet access over a high performance, diverse network with connectivity in more than 60 countries. Our fiber network spans approximately 400,000 route miles globally with extensive off-net access solutions across North America, Europe and Asia Pacific;
 - *VPN Data Networks.* Built on our extensive fiber-optic network, we create private networks tailored to our customers' needs. These technologies enable service providers, enterprises and government entities to streamline multiple networks into a single, cost-effective solution that simplifies the transmission of voice, video, and data over a single secure network; and
 - *Voice Over Internet Protocol ("VoIP").* We deliver a broad range of local and enterprise voice and data services built on VoIP technology, including VoIP enhanced local service, national and multinational session initiation protocol ("SIP") trunking, hosted VoIP service, Primary Rate Interface ("PRI") service support, long distance service and toll-free service.

- *Fiber Infrastructure Services*
 - *Dark Fiber.* We control an extensive array of unlit optical fiber known as "dark fiber," which has been laid but not yet been equipped with the equipment necessary for it to transmit data. We provide access to this unlit optical fiber to customers who are interested in building their networks with this high-bandwidth, highly secure optical technology. We also provide professional services to engineer these networks, and in some cases, manage them for customers; and
 - *Optical Services.* We deliver high bandwidth optical wavelength networks to customers requiring an end-to-end solution with ethernet technology for a scalable amount of bandwidth connecting sites or providing high-speed access to cloud computing resources.

- *Voice and Other*
 - *Voice Services.* We offer our customers a complete portfolio of traditional Time Division Multiplexing ("TDM") voice services including PRI service, local inbound service, switched one-plus, toll free, long distance and international services;
 - *Private Line.* We deliver private line services, a direct circuit or channel specifically dedicated for connecting two or more organizational sites. Private line service offers a high-speed, secure solution for frequent transmission of large amounts of data between sites, including wireless backhaul transmissions; and
 - *Other Legacy Services.* We continue to provide certain services based on older platforms to support our customers as they transition to newer technology. These services include Synchronous Optical Network ("SONET") based ethernet, legacy data hosting services, and conferencing services.

At December 31, 2022, we reported our products and services revenue among the following categories for the Mass Markets segment:

- *Fiber Broadband*, under which we provide high speed broadband services to residential and small business customers utilizing our fiber-based network infrastructure;
- *Other Broadband*, under which we provide primarily lower speed broadband services to residential and small business customers utilizing our copper-based network infrastructure; and
- *Voice and Other*, under which we derive revenues from (i) providing local and long-distance voice services, professional services, and other ancillary services, and (ii) federal broadband and state support payments.

Research, Development & Intellectual Property

As of December 31, 2022, we held approximately 2,900 patents and patent applications in the U.S. and other countries. We have also received licenses to use patents held by others. Patent licenses give us the freedom to operate our business without the risk of interruption from the holder of the patented technology. We plan to continue to file new patent applications as we enhance and develop products and services, and we plan to continue to seek opportunities to expand our patent portfolio through strategic acquisitions and licensing.

In addition to our patent rights, we have rights in various trade names, trademarks, copyrights and other intellectual property that we use to conduct our business. Our services often use the intellectual property of others, including licensed software. We also occasionally license our intellectual property to others as we deem appropriate.

For information on various litigation risks associated with owning and using intellectual property rights, see "Risk Factors—Business Risks" in Item 1A of Part I of this report, and Note 18—Commitments, Contingencies and Other Items to our consolidated financial statements in Item 8 of Part II of this report.

Regulation of Our Business

Our domestic operations are regulated by the Federal Communications Commission (the "FCC"), by various state regulatory commissions and occasionally by local agencies. Our non-domestic operations are regulated by supranational groups (such as the European Union, or EU), national agencies and frequently state, provincial or local bodies. Generally, we must obtain and maintain operating licenses from these bodies in most areas where we offer regulated services.

Changes in the composition and leadership of the FCC, state regulatory commissions and other agencies that regulate our business could have significant impacts on our revenue, expenses, competitive position and prospects. Changes in the composition and leadership of these agencies are often difficult to predict, which makes future planning more difficult.

The following description discusses some of the major regulations affecting our operations, but others could have a substantial impact on us as well. For additional information, see "Risk Factors" in Item 1A of Part I of this report.

Federal Regulation of Domestic Operations

General

The FCC regulates the interstate services we provide, including the business data service charges we bill for wholesale network transmission and intercarrier compensation, including the interstate access charges that we bill other communications companies in connection with the origination and termination of interstate phone calls. Additionally, the FCC regulates several aspects of our business related to international communications services, privacy, public safety and network infrastructure, including (i) our access to and use of local telephone numbers, (ii) our provision of emergency 911 services and (iii) our use or removal (potentially on a reimbursable basis) of equipment produced by certain vendors deemed to cause potential national security risks. We could incur substantial penalties if we fail to comply with the FCC's applicable regulations.

Many of the FCC's regulations adopted in recent years remain subject to judicial review and additional rulemakings, thus increasing the difficulty of determining the ultimate impact of these changes on us and our competitors.

Universal Service

Between 2015 and 2021, we received approximately \$500 million annually through Phase II of the FCC's Connect America Fund ("CAF II"), a program that ended on December 31, 2021. In connection with the CAF II funding, we were required to meet certain specified infrastructure buildout requirements in 33 states by the end of 2021, which required substantial capital expenditures. In the first quarter of 2022, we recognized \$59 million of previously deferred revenue related to the conclusion of the CAF II program based upon our final buildout and filing submissions. The government has the right to audit our compliance with the CAF II program. The ultimate outcome of any remaining examinations is unknown, but could result in a liability to us in excess of our reserve accruals established for these matters.

In early 2020, the FCC created the Rural Digital Opportunity Fund (the "RDOF"), which is a federal support program designed to replace the CAF II program. On December 7, 2020, the FCC allocated in its RDOF Phase I auction \$9.2 billion in support payments over 10 years to deploy high speed broadband to over 5.2 million unserved locations. We won bids to receive approximately \$26 million of annual RDOF Phase I support payments, of which approximately 36% is attributable to the ILEC business we divested on October 3, 2022. Our support payments under the RDOF Phase I program commenced during the second quarter of 2022.

In November 2021, the U.S. Congress enacted legislation that appropriated \$65 billion to improve broadband affordability and access, primarily through federally funded state grants. As of the date of this report, various state and federal agencies are continuing to take steps to make this funding available to eligible applicants, including us. It remains premature to speculate on the potential impact of this legislation on us.

For additional information about these programs, see (i) Note 4—Revenue Recognition to our consolidated financial statements in Item 8 of Part II of this report and (ii) "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of Part II of this report.

Broadband Regulation

In February 2015, the FCC adopted an order classifying broadband internet access services (“BIAS”) under Title II of the Communications Act of 1934 and applying new regulations. In December 2017, the FCC voted to repeal the classification of BIAS as a Title II service and to preempt states from imposing substantial regulations on broadband services. Opponents of this change appealed this action in federal court. Several states have also opposed the change and have proposed, implemented or enacted laws or orders focused on state-specific Internet service regulation. In October 2019, the federal court upheld the FCC’s classification decision but vacated a part of its preemption ruling. Various courts are considering or have ruled upon the issue of the enforceability of state broadband regulation, and additional litigation and appeals are expected with respect to this issue. In addition, members of the Biden Administration and various consumer interest groups have advocated in favor of reclassifying BIAS under Title II. The ultimate impact of these pending judicial matters and calls for additional regulation are currently unknown to us, although the imposition of heightened regulation of our Internet operations could potentially hamper our ability to operate our data networks efficiently, restrict our ability to implement network management practices necessary to ensure quality service, increase the cost of operating, maintaining and upgrading our network, and otherwise negatively impact our current operations.

State Regulation of Domestic Operations

Historically ILECs, including ours, have been regulated as “common carriers,” and state regulatory commissions have generally exercised jurisdiction over intrastate voice telecommunications services and their associated facilities. In recent years, most states have reduced their regulation of ILECs. State regulatory commissions generally continue to (i) set the rates that telecommunications companies charge each other for exchanging traffic, (ii) administer support programs designed to subsidize the provision of services to high-cost rural areas, (iii) regulate the purchase and sale of ILECs, (iv) require ILECs to provide service under publicly-filed tariffs setting forth the terms, conditions and prices of regulated services, (v) limit ILECs’ ability to borrow and pledge their assets, (vi) regulate transactions between ILECs and their affiliates and (vii) impose various other service standards.

In most states, switched and business data services and interconnection services are subject to price regulation, although the extent of regulation varies by type of service and geographic region. In addition, Voice-Over-Internet Protocol services are regulated by state regulators, but more lightly than ILEC services. State agencies also regulate certain aspects of non-ILEC communications businesses, including administering the payment of federal subsidies to support broadband infrastructure construction.

Data Privacy Regulations

Various foreign, federal and state laws govern our storage, maintenance and use of customer data, including a wide range of consumer protection, data protection, privacy, intellectual property and similar laws. Data privacy regulations are complex and vary across jurisdictions. As a company with global operations, we must comply with various jurisdictional data privacy regulations, including the General Data Protection Regulation (“GDPR”) in the EU and similar laws adopted by various other jurisdictions in certain of our domestic and overseas markets. The application, interpretation and enforcement of these laws are often uncertain, and may be interpreted and applied inconsistently from jurisdiction to jurisdiction. These regulations require careful handling of personal and customer data and could have a significant impact on our business, especially if we violate any of those regulations.

Anti-Bribery and Corruption Regulations

As a company with global operations, we must comply with complex foreign and U.S. laws and regulations governing business ethics and practices, such as the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act and other local laws prohibiting corrupt payments to governmental officials and anti-competition regulations. We have compliance policies, programs and training designed to prevent non-compliance with such anti-corruption regulations in the U.S. and other jurisdictions.

Regulation of International Operations

Our subsidiaries operating outside of the U.S. are subject to various regulations in the markets where service is provided. The scope of regulation varies from country to country. The communications regulatory regimes in certain of our non-domestic markets are in the process of development. Many issues, including the pricing of services, have not been addressed fully, or even at all.

Our overseas operations are also subject to various other domestic or non-domestic laws or regulations, including various laws or regulations governing exports and imports of various goods or technologies and certain sanctioned business activities.

In 2020, the United Kingdom ("UK") terminated its membership in the EU ("Brexit") and has entered into related separation agreements with the EU regarding data sharing, financial services and other matters. We currently operate a staging facility in the UK, where certain core network elements and customer premise equipment is configured before being shipped to both UK and EU locations. The UK is currently also a central repository of our spare parts for use in our European operations. Nonetheless, only a relatively small portion of our business is conducted within the UK, and we have entered into an arrangement to sell our EMEA operations. Consequently, we do not anticipate Brexit will have a substantial impact on our business.

Other Regulations

Our networks and properties are subject to numerous federal, state and local laws and regulations, including laws and regulations governing the use, storage and disposal of hazardous materials, the release of pollutants into the environment and the remediation of contamination. Our contingent liabilities under these laws are further described in Note 18—Commitments, Contingencies and Other Items. Certain federal and state agencies, including attorneys general, monitor and exercise oversight related to consumer protection issues. We are also subject to codes that regulate our trenching and construction operations or that require us to obtain permits, licenses or franchises to operate. Such regulations are enacted by municipalities, counties, state, federal or other regional governmental bodies, and can vary widely from jurisdiction to jurisdiction as a result. Such regulations may also require us to pay substantial fees.

Seasonality

Overall, our business is not materially impacted by seasonality. Our network-related operating expenses are, however, generally higher in the second and third quarters of the year. From time to time, weather related problems have resulted in increased costs to repair our network and respond to service calls in some of our markets. The amount and timing of these costs are subject to the weather patterns of any given year but have generally been highest during the third quarter and have been related to damage from severe storms, including hurricanes, tropical storms and tornadoes in our markets along the Atlantic and Gulf of Mexico coastlines.

Additional Information

From time to time, we may make investments in other communications or technology companies. For further information on regulatory, technological and competitive factors that could impact our revenue, see "Regulation" above under this Item 1, "Competition" above under this Item 1, "Risk Factors" below under Item 1A. For more information on the financial contributions of our various services, see "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of Part II of this report.

Website Access and Important Investor Information

We were incorporated in Louisiana in 1968. Our website is www.lumen.com. We routinely post important investor information in the "Investor Relations" section of our website at ir.lumen.com. The information contained on, or that may be accessed through, our website is not part of this report or any other periodic reports that we file with the SEC. Any references to our website in this report or any other periodic reports that we file with the SEC are provided for convenience only, and are not intended to make any of our website information a part of this or such other reports. You may obtain free electronic copies of annual reports on Form 10-K, quarterly reports on Form 10-Q, and current reports on Form 8-K of us and two of our principal subsidiaries, and amendments to those reports, in the "Investor Relations" section of our website (ir.lumen.com) under the heading "FINANCIALS" and subheading "SEC Filings." These reports are also available on the SEC's website at www.sec.gov. From time to time, we also use our website to webcast our earnings calls and certain of our meetings with investors or other members of the investment community.

We have adopted a written code of conduct that serves as the code of ethics applicable to our directors, officers and employees, in accordance with applicable laws and rules promulgated by the SEC and the New York Stock Exchange. In the event that we make any changes (other than by a technical, administrative or non-substantive amendment) to, or provide any waivers from, the provisions of our code of conduct applicable to our directors or executive officers, we intend to disclose these events on our website or in a report on Form 8-K filed with the SEC. The code of conduct, as well as copies of our guidelines on significant governance issues and the charters of our key board committees, are also available in the "Governance" section of our website at www.lumen.com/en-us/about/governance or in print to any shareholder who requests them by sending a written request to our Corporate Secretary at Lumen Technologies, Inc., 100 CenturyLink Drive, Monroe, Louisiana, 71203.

In connection with filing this report, our chief executive officer and chief financial officer made the certifications regarding our financial disclosures required under the Sarbanes-Oxley Act of 2002, and its related regulations. In addition, during 2022, our chief executive officer certified to the New York Stock Exchange that she was unaware of any violations by us of the New York Stock Exchange's corporate governance listing standards.

As a large complex organization, we are from time to time subject to litigation, disputes, governmental or internal investigations, consent decrees, service outages, security breaches or other adverse events. We typically publicly disclose these occurrences (and their ultimate outcomes) only when we determine these disclosures to be material to investors or otherwise required by applicable law.

We typically disclose material non-public information by disseminating press releases, making public filings with the SEC, or disclosing information during publicly accessible meetings or conference calls. Nonetheless, from time to time we have used, and intend to continue to use, our website and social media accounts to augment our disclosures.

Investors should also be aware that while we do, at various times, answer questions raised by securities analysts, it is against our policy to disclose to them selectively any material non-public information or other confidential information. Investors should not assume that we agree with any statement or report issued by an analyst with respect to our past or projected performance. To the extent that reports issued by securities analysts contain any projections, forecasts or opinions, such reports are not our responsibility.

Unless otherwise indicated, information contained in this report and other documents filed by us under the federal securities laws concerning our views and expectations regarding the technology or communications industries are based on estimates made by us using data from industry sources and making assumptions based on our industry knowledge and experience. You should be aware that we have not independently verified data from industry or other third-party sources and cannot guarantee its accuracy or completeness.

We have defined methodologies for calculating certain of our statistical data, including route miles, broadband subscribers, broadband-enabled units, on-net buildings and similar metrics. We may calculate these amounts differently from other industry participants.

Our principal executive offices and telephone number are listed on the cover page of this report.

ITEM 1A. RISK FACTORS

The following discussion identifies material factors that could (i) materially and adversely affect our business, financial condition, results of operations or prospects or (ii) cause our actual results to differ materially from our anticipated results, projections or other expectations. The following information should be read in conjunction with the other portions of this annual report, including "Special Note Regarding Forward-Looking Statements", "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 and our consolidated financial statements and related notes in Item 8. All references to "Notes" in this Item 1A of Part I refer to the Notes to Consolidated Financial Statements included in Item 8 of Part II of this report. Please note the following discussion is not intended to comprehensively list all risks or uncertainties faced by us. Our operations or actual results could also be similarly impacted by additional risks and uncertainties that are not currently known to us, that we currently deem to be immaterial, that arise in the future or that are not specific to us. In addition, certain of the risks described below apply only to a part or segment of our business.

Business Risks

We may not be able to create the global digital experience expected by customers.

Our customers expect us to create and maintain a global digital experience, including (i) automation and simplification of our offerings and (ii) digital self-service access to our products, services and customer support. To do so, we must timely and successfully complete the digital transformation of our operations that is currently underway. Effective digital transformation is a complex, dynamic process requiring efficient allocation and prioritization of resources, simplification of our product portfolio, faster product deployments, retirement of obsolete systems, migration of data and corresponding workforce and system development. We cannot assure you we will be able to timely effect the successful digital transformation necessary to develop or deliver a global digital experience expected by our customers. If we are unable to do so, we could lose existing customers or fail to attract new ones, either of which could prevent us from attaining our financial goals.

Challenges with integrating or modernizing our existing applications and systems could harm our performance.

To succeed, we need to integrate, update and upgrade our existing applications and systems, including many legacy systems from past acquisitions. We cannot assure you we will be able to integrate our legacy IT systems, modernize our infrastructure, timely retire aging systems or deploy a master data management platform. These modernization efforts will require efficient allocation of resources, development capacity, greater use of artificial intelligence and other emerging technologies, access to subject-matter experts, development of a sustainable operating model and successful collaboration between legal, privacy and security personnel. Any failure to timely accomplish these initiatives may negatively affect our (i) customer and employee experiences, (ii) ability to meet regulatory, legal or contractual obligations, (iii) network stability, (iv) ability to realize anticipated efficiencies, (v) ability to timely repair infrastructure and respond to service outages or (vi) ability to deliver services to our customers at required speed and scale.

We operate in an intensely competitive industry and existing and future competitive pressures could harm our performance.

Each of our business and mass market offerings faces increasingly intense competition, with increased pressure to timely offer digitally integrated services, from a wide range of sources under evolving market conditions that have increased the number and variety of companies that compete with us. Some of our current and potential competitors: (i) offer products or services that are substitutes for our traditional wireline services, including wireless broadband, wireless voice and non-voice communication services, (ii) offer a more comprehensive range of communications products and services, (iii) have greater financial, provisioning, technical, engineering, research, development, marketing, customer relations or other resources, (iv) conduct operations or raise capital at a lower cost than we do, (v) are subject to less regulation than we are, (vi) have stronger brand names, (vii) have deeper or more long-standing relationships with key customers, (viii) might be perceived as having an ESG profile more attractive to customers or employees, or (ix) have larger operations than ours, any of which may enable them to compete more successfully for customers, strategic partners and acquisitions. In recent years, competitive pressures have commoditized pricing for some of our products and services and lowered market prices for many of our other products and services. Continued competitive pressures will likely place further downward pressure on market pricing.

Our ability to successfully compete could be hampered if we fail to timely develop and market innovative technology solutions that address changing customer demands.

The technology and communications industry has been and continues to be impacted by significant technological changes, which are enabling an increasing variety of companies to compete with us. Many of these technological changes are (i) displacing or reducing demand for certain of our services, (ii) enabling the development of competitive products or services, (iii) enabling customers to reduce or bypass use of our networks or (iv) reducing our profit margins. For example, as service providers continue to invest in 5G and low earth orbit satellite networks and services, their services could reduce demand for our network services. Increasingly, customers are demanding more technologically advanced products that suit their evolving needs. To remain competitive, we will need to accurately predict and respond to changes in technology, to continue developing products and services attractive to our customers, to timely provision our products and services, to maintain and expand our network to enable it to support customer demands for greater transmission capacity and speeds, and to discontinue outdated products and services on a cost-effective basis. Our ability to do so could be restricted by various factors, including limitations of our existing network, technology, capital or personnel. If we fail at that, we could lose customers or fail to attract new ones.

We may be unable to attract, develop and retain leaders and employees with the right skillsets and technical expertise.

We may be unable to attract and retain skilled and motivated leaders and employees who possess the right skillsets and technical, managerial and development expertise to execute on our plans for transformation, innovation and strategic growth. We operate in a highly competitive and expanding industry, where competition for highly skilled employees has grown increasingly intense, and we have experienced, and may continue to experience, higher than anticipated levels of employee attrition. Our competitors periodically target our employees with highly sought-after skills and will likely continue to do so in the future. Further, the increased availability of remote working arrangements, largely driven by the COVID-19 pandemic, has expanded the pool of companies that can compete for our employees and employee candidates. We believe some of our competitors with greater resources and fewer cost constraints than us have from time to time been able to offer compensation, benefits or accommodations in excess of what we are able to offer. These risks to attracting and retaining the necessary talent may be exacerbated by inflationary pressures on employee wages and benefits. As a result, we may be unable to cost-effectively hire and retain employees with market-leading skills. There is no assurance our efforts to recruit and retain qualified personnel will be successful. If we are unable to do so, such failure could have a material adverse effect on our operations and financial condition.

The COVID-19 pandemic caused us to modify our workforce practices, including having the majority of our employees work from home on a fully remote or hybrid basis. We reopened our offices in 2022 under a “hybrid” working environment, meaning that some of our employees have the flexibility to work remotely at least some of the time, for the foreseeable future. The hybrid working environment may impair our ability to maintain our collaborative and innovative culture, and may cause disruptions among our employees, including decreases in productivity, challenges in collaboration between on-site and off-site employees and, potentially, employee dissatisfaction and attrition. If our attempts to operate under a hybrid working environment are not successful, our business could be adversely impacted.

The pandemic, inflation and other events over the past couple years have increased employees’ expectations regarding compensation, workplace flexibility and work-home balance. These developments have intensified certain of our above-described challenges and made it relatively more difficult for us to attract and retain top talent. We do not expect these developments to have a material adverse impact on us, but we can provide no assurances to this effect.

We could be harmed if our reputation is damaged.

We believe our Lumen and other brand names and our reputation are important corporate assets that help us attract and retain customers and talented employees. However, our corporate reputation is susceptible to material damage by events such as disputes with customers or competitors, cyber-attacks or service outages, internal control deficiencies, delivery failures, compliance violations, government investigations or legal proceedings. Similar events impacting one of our competitors could result in negative publicity for our entire industry that indirectly harms our business. We may also experience reputational damage if customers, vendors, employees, advocacy groups,

regulators, investors, the media, social media influencers or others criticize our services, operations or public positions.

There is a risk that negative or inaccurate information about Lumen, even if based on rumor or misunderstanding, could adversely affect our business. Damage to our reputation could be difficult, expensive and time-consuming to repair. Damage to our reputation could also reduce the value and effectiveness of the Lumen brand name and could reduce investor confidence in us, having a material adverse impact on the value of our securities.

We could be harmed by cyber-attacks.

Our vulnerability to cyber-attacks is heightened by several features of our operations, including (i) our material reliance on our networks to conduct our operations, (ii) our transmission of large amounts of data over our systems and (iii) our processing and storage of sensitive customer data.

Cyber-attacks on our systems may stem from a variety of sources, including fraud, malice or sabotage on the part of foreign nations, third parties, vendors, or employees and attempts by outside parties to gain access to sensitive data that is stored in or transmitted across our network. Cyber-attacks can take many forms, including computer hackings, computer viruses, ransomware, worms or other destructive or disruptive software, denial of service attacks, or other malicious activities. Cyber-attacks can put at risk personally identifiable customer data or protected health information, thereby implicating stringent domestic and foreign data protection laws. These threats may also arise from failure or breaches of systems owned, operated or controlled by other unaffiliated operators to the extent we rely on them to operate our business. Various other factors could intensify these risks, including, (i) our maintenance of information in digital form stored on servers connected to the Internet, (ii) our use of open and software-defined networks, (iii) the complexity of our multi-continent network composed of legacy and acquired properties, (iv) growth in the size and sophistication of our customers and their service requirements, (v) increased use of our network due to greater demand for data services and (vi) our increased incidence of employees working from remote locations.

Like other prominent technology and communications companies, we and our customers are constant targets of cyber-attacks. The number of these attacks against us increased in 2022. Despite our efforts to prevent these events, some of these attacks have resulted in security breaches, although thus far none of these breaches has resulted in a material adverse effect on our operating results or financial condition. You should be aware, however, that the risk of breaches is likely to continue to increase due to several factors, including the increasing sophistication of cyber-attacks and the wider accessibility of cyber-attack tools. Known and newly discovered software and hardware vulnerabilities are constantly evolving, which increases the difficulty of detecting and successfully defending against them. You should be further aware that defenses against cyber-attacks currently available to U.S. companies are unlikely to prevent intrusions by a highly-determined, highly-sophisticated hacker. Consequently, you should assume we will be unable to implement security barriers or other preventative measures that repel all future cyber-attacks.

Although we maintain insurance coverage that may, subject to policy terms and conditions (including self-insured deductibles, coverage restrictions and monetary coverage caps), cover certain aspects of our cyber risks, such insurance coverage may be unavailable or insufficient to cover our losses.

Cyber-attacks could (i) disrupt the proper functioning of our networks and systems, which could in turn disrupt the operations of our customers, (ii) result in the destruction, loss, theft, misappropriation or release of proprietary, confidential, sensitive, classified or otherwise valuable information of ours, our employees, our customers or our customers' end users, (iii) require us to notify customers, regulatory agencies or the public of data breaches, (iv) damage our reputation or result in a loss of business, (v) require us to provide credits for future service to our customers or to offer expensive incentives to retain customers; (vi) subject us to claims by our customers or regulators for damages, fines, penalties, license or permit revocations or other remedies, (vii) result in the loss of industry certifications, or (viii) require significant management attention or financial resources to remedy the resulting damages or to change our systems. Any or all of the foregoing developments could have a material adverse impact on us.

We could be harmed by outages in our network or various platforms, or other failures of our services.

From time to time in the ordinary course of our business, we experience outages in our network, hosting, cloud or IT platforms, or failures of our products or services (including basic and enhanced 911 emergency services) to perform in the manner anticipated. These disruptions expose us to several of the same risks listed above for cyber-attacks, including the loss of customers, the issuance of credits or refunds, and regulatory fines. We remain vulnerable to future disruptions due to several factors, including aging network elements, human error, continuous changes in our network, the introduction of new products or technologies, vulnerabilities in our vendors or supply chain, aberrant employees and hardware and software limitations. The process for remediating any interruptions, outages, delays or cessations of service could be more expensive, time-consuming, disruptive and resource intensive than planned. Delayed sales, lower margins, fines or lost customers resulting from future disruptions could have a material adverse impact on our business, reputation, results of operations, financial condition, cash flows and stock price.

Several of our services continue to experience declining revenue, and our efforts to offset these declines may not be successful.

Primarily as a result of the competitive and technological changes discussed above, we have experienced a prolonged systemic decline in our local voice, long-distance voice, network access and private line revenues. Consequently, we have experienced declining consolidated revenues (excluding acquisitions) for a prolonged period and have not been able to realize cost savings sufficient to fully offset the decline. More recently, we have experienced declines in revenue derived from a broader array of our products and services, including those marketed to our enterprise customers and customers with global locations. We have thus far been unable to reverse our annual revenue losses (excluding acquisitions). In addition, most of our more recent product and service offerings generate lower profit margins and may have shorter lifespans than our traditional communication services, and some can be expected to experience slowing or no growth in the future. Some of our new product offerings have reduced or displaced our sale of older product offerings. Accordingly, we may not be successful in attaining our goal of achieving future revenue growth.

Our operations, financial performance and liquidity are materially reliant on key suppliers, vendors and other third parties.

Our ability to conduct our operations could have a material adverse impact on us if certain of our arrangements with third parties were terminated, including those further described below.

Reliance on other communications providers. To offer certain services in certain of our markets, we must either purchase services or lease network capacity from, or interconnect our network with, the infrastructure of other communications carriers or cloud companies who typically compete against us in those markets. Our reliance on these supply or interconnection arrangements limits our control over the delivery and quality of our services. In addition, we are exposed to the risk that other carriers may be unwilling or unable to continue or renew these arrangements in the future. Those risks are heightened when the other carrier is a competitor who may benefit from terminating the agreement or imposing price increases. Additionally, several communications companies rely on our network to transmit their data or voice traffic. Their reliance on our network exposes us to the risk that they may transfer all or a portion of this traffic from our network to alternative networks owned, constructed or leased by them, thereby reducing our revenue. Certain of our hyperscaler customers have built infrastructure that has reduced their reliance on us.

Reliance on key suppliers and vendors. We depend on a limited number of suppliers and vendors to provide us, directly or through other suppliers, with equipment and services relating to our network infrastructure, including fiber optic cable, software, optronics, transmission electronics, digital switches, routing equipment, customer premise equipment, and related components. We also rely on software and service vendors or other parties to assist us with operating, maintaining and administering our business, including billing, security, provisioning and general operations. If any of these vendors experience business interruptions, security breaches, litigation or other issues that interfere with their ability to deliver their products or services on a timely basis, our operations could suffer significantly.

For a description of how the COVID-19 pandemic and its aftermath have impacted our access to supplies and labor, please see Item 7 in Part II of this report.

Reliance on key licensors. We rely on key technologies licensed from third parties to deliver certain of our products and services. Our agreements with these licensors may expire or be terminated, and some of the licenses may not be available to us in the future on terms acceptable to us or at all. Moreover, if we incorporate licensed technology into our network, we may have limited flexibility to deploy different technologies from alternative licensors.

Reliance on key customer contracts. We have several complex high-value national and global customer contracts. These contracts are frequently impacted by a variety of factors that could reduce or eliminate the profitability of these contracts. Moreover, we would be adversely impacted if we fail to renew major contracts upon their expiration.

Reliance on landowners. We rely on rights-of-way, colocation agreements, franchises and other authorizations granted by governmental bodies, railway companies, utilities, carriers and other third parties to locate a portion of our network equipment over, on or under their respective properties. A significant number of these authorizations are scheduled to lapse over the next five to ten years, unless we are able to extend or renew them. Further, some of our operations are subject to licensing and franchising requirements imposed by municipalities or other governmental authorities. Our operations could be adversely affected if any of these authorizations are cancelled, or otherwise terminate or lapse, or if the landowner requests price increases. Similarly, our buildout plans can be delayed if we cannot receive necessary landowner authorizations or governmental permits. We cannot assure you we will be able to successfully extend these arrangements when their terms expire, or to enter into new arrangements that may be necessary to implement our network expansion opportunities.

Climate change could disrupt our operations, cause us to incur substantial additional capital and operating costs or negatively affect our business.

A substantial number of our domestic facilities are located in coastal states, which subjects them to the risks associated with severe tropical storms, hurricanes and tornadoes, and many other of our facilities are subject to the risk of earthquakes, floods, fires, tornadoes or other similar casualty events. From time to time these events (including Hurricane Ian in 2022 in Florida) have disrupted our operations, and similar future events could cause substantial damages, including downed transmission lines, flooded facilities, power outages, fuel shortages, network congestion, delay or failure, damaged or destroyed property and equipment, and work interruptions. Due to substantial deductibles, coverage limits and exclusions, and limited availability, we have typically recovered only a portion of our losses through insurance.

Climate change may increase the frequency or severity of natural disasters and other extreme weather events in the future, which would increase our exposure to the above-cited risks and could disrupt our supply chain from our key suppliers and vendors.

Our environmental, social and governance (ESG) commitments and disclosures may expose us to reputational and legal risks.

Our brand and reputation could be impacted by our public commitments to various corporate environmental, social and governance (ESG) initiatives, including our political contributions, our advocacy positions, and our goals for sustainability, inclusion and diversity. Positions we take or do not take on ESG issues could negatively impact our ability to attract or retain customers and employees. In addition, we could be criticized for the timing, scope or nature of these initiatives, goals, or commitments, or for any revisions to them. To the extent that our required and voluntary disclosures about ESG matters increase, we could be criticized for the accuracy, adequacy, or completeness of such disclosures. Our actual or perceived failure to achieve our ESG-related initiatives, goals, commitments or mandates could negatively impact our reputation or otherwise materially harm our business.

Increasing focus on ESG matters has resulted in, and is expected to continue to result in, the adoption of legal and regulatory requirements designed to mitigate the effects of climate change on the environment, as well as legal and regulatory requirements requiring additional related disclosures. If new laws or regulations are more stringent than current legal or regulatory requirements, we may experience increased compliance burdens and costs to meet such obligations. In addition, our selection of voluntary disclosure frameworks and standards, and the interpretation or application of those frameworks and standards, may change from time to time or may not meet the expectations of investors or other stakeholders. Our ability to achieve our ESG commitments is subject to numerous risks, many of which are outside of our control, including: (i) evolving and potentially inconsistent regulatory requirements affecting ESG standards, measurements, methodologies and disclosures; (ii) the availability of

suppliers that can meet our sustainability, diversity and other standards; and (iii) our ability to recruit, develop, and retain diverse talent. Our processes and controls for reporting ESG matters across our operations and supply chain are evolving along with multiple disparate standards for identifying, measuring, and reporting ESG metrics, including enhanced ESG-related disclosures that may be required by the SEC, and other regulators. Such standards may change over time, which could result in significant revisions to our current goals, reported progress in achieving such goals, or ability to achieve such goals in the future.

Any additional future acquisitions or strategic investments may not be available on attractive terms and would subject us to additional risks.

Much of our past growth is attributable to acquisitions. In an effort to implement our business strategies, we may from time to time in the future attempt to pursue other acquisition or expansion opportunities, including strategic investments. To the extent we can identify attractive opportunities, these transactions could involve acquisitions of entire businesses or investments in start-up or established companies and could take several forms. These types of transactions may present significant risks and uncertainties, including the difficulty of identifying appropriate companies to acquire or invest in on acceptable terms, potential violations of covenants in our debt instruments, insufficient revenue acquired to offset liabilities assumed, unexpected expenses, inadequate return of capital, regulatory or compliance issues, potential infringements, difficulties integrating the new properties into our operations, and other unidentified issues not discovered in due diligence. In addition, the financing of any future acquisition completed by us could adversely impact our capital structure. Except as required by law or applicable securities exchange listing standards, we do not expect to ask our shareholders to vote on any proposed acquisition.

Dispositions could have a detrimental impact on us or the holders of our securities.

In the past, we have disposed of businesses or asset groups for a variety of reasons, and currently expect to consummate within the next year a planned divestiture discussed elsewhere in this section "Item 1A. Risk Factors." In addition, we may dispose of other businesses or asset groups from time to time in the future. If we proceed with any such other divestitures of assets, we may experience operational difficulties segregating them from our retained assets and operations, which could result in disruptions to our operations or claims for damages, among other things. Moreover, such dispositions could reduce our cash flows available to support our capital expenditures, pension contributions, debt maturities or other commitments.

We face other business risks.

We face other business risks, including among others:

- the difficulties of managing and administering an organization that offers a complex set of products to a diverse range of customers across several continents; and
- the adverse effects of terrorism, rioting, vandalism or social unrest.

Legal and Regulatory Risks

We are subject to an extensive, evolving regulatory framework that could create operational or compliance costs.

As explained in greater detail elsewhere in this annual report, (i) our domestic operations are regulated by the FCC and other federal, state and local agencies and (ii) our international operations are regulated by a wide range of various foreign and international bodies. We cannot assure you we will be successful in obtaining or retaining all regulatory licenses necessary to carry out our business in our various markets. Even if we are, the prescribed service standards and conditions imposed on us under these licenses and related laws may increase our costs, limit our operational flexibility or result in third-party claims.

We are subject to numerous requirements and interpretations under various international, federal, state and local laws, rules and regulations, which are often quite detailed and occasionally in conflict with each other. Accordingly, we cannot ensure we will always be considered to be in compliance with all these requirements at any single point in time.

Various governmental agencies, including state attorneys general with jurisdiction over our operations, have routinely in the past investigated our business practices either in response to customer complaints or on their own initiative, and are expected to continue to do the same in the future. Certain of these investigations have resulted in substantial fines in the past. On occasion, we have resolved such matters by entering into consent decrees, which are court orders that frequently bind us to specific conduct going forward. If breached by us, these consent decrees expose us not only to contractual remedies, but also to judicial enforcement via contempt of court proceedings, any of which could have material adverse consequences. Additionally, future investigations can potentially result in enforcement actions, litigation, fines, settlements or reputational harm, or could cause us to change our sales practices or operations.

Our prior participation in the FCC's CAF II program and current participation in the FCC's RDOF program subjects us to certain financial risks. If we are not in compliance with FCC measures by the end of the CAF II and RDOF programs, we could incur substantial penalties or forfeitures, including but not limited to being suspended or debarred from future governmental programs or contracts for a significant period of time, which could have a material adverse impact on our financial condition.

We provide products or services to various federal, state and local agencies. Our failure to comply with complex governmental regulations and laws applicable to these programs, or the terms of our governmental contracts, could result in us suffering substantial negative publicity or penalties, being suspended or debarred from future governmental programs or contracts for a significant period of time and in certain instances could lead to the revocation of our FCC licenses. Moreover, certain governmental agencies frequently reserve the right to terminate their contracts for convenience or if funding is unavailable. If our governmental contracts are terminated for any reason, or if we are suspended or debarred from governmental programs or contracts, it could have a material adverse impact on our results of operations and financial condition.

A variety of state, national, foreign and international laws and regulations apply to the collection, use, retention, protection, security, disclosure, transfer and other processing of personal and other data. The European Union and other international regulators, as well as some state governments, have recently enacted or enhanced data privacy regulations, and other governments are considering establishing similar or stronger protections. Many of these laws are complex and change frequently and often conflict with the laws in other jurisdictions. Some of our customers impose similar requirements on us that are equally or more demanding. Despite our best efforts to comply with these governmental or contractual requirements, any noncompliance could result in incurring potential substantial penalties and reputational damage.

Adapting and responding to changing regulatory requirements has historically materially impacted our operations. We believe evolving regulatory developments and regulatory uncertainty could continue to have a material impact on our business. In particular, our business could be materially impacted if the U.S. Congress amends or eliminates current federal law limitations on the liability of private network providers, such as us, against claims related to third party content stored or transmitted on private networks, as currently proposed by certain governmental officials, legislative leaders and consumer interest groups. We could also be materially affected if currently pending proposals to increase the regulation of internet service providers or to further strengthen data privacy laws are implemented. In addition, federal and state agencies that regulate the support program payments we receive or the fees that we charge for certain of our regulated services can, and from time to time do, reduce the amounts we receive or can charge. The variability of these laws could also hamper the ability of us and our customers to plan for the future or establish long-term strategies.

Third-party content stored or transmitted on our networks could result in liability or otherwise damage our reputation.

While we disclaim liability for third-party content in most of our service contracts, as a private network provider we potentially could be exposed to legal claims relating to third-party content stored or transmitted on our networks. Such claims could involve, among others, allegations of defamation, invasion of privacy, copyright infringement, or aiding and abetting restricted activities such as online gambling or pornography. Although we believe our liability for these types of claims is limited under current law, suits against other carriers have been successful and we cannot assure you that our defenses will prevail. Such third-party content could also result in adverse publicity and damage our reputation. Moreover, as noted above, pending proposals to change the law could materially heighten our legal exposure.

Our pending legal proceedings could have a material adverse impact on us.

There are several potentially material proceedings pending against us. Results of these legal proceedings cannot be predicted with certainty. As of any given date we could have exposure to losses under proceedings in excess of our accrued liability. For each of these reasons, any of the proceedings described in Note 18—Commitments, Contingencies and Other Items, as well as current litigation not described therein or future litigation, could have a material adverse effect on our business, reputation, financial position, operating results, the trading price of our securities and our ability to access the capital markets. We can give you no assurances as to the ultimate impact of these matters on us.

We may not be successful in protecting and enforcing our intellectual property rights.

We rely on various patents, copyrights, trade names, trademarks, service marks, trade secrets and other similar intellectual property rights, as well as confidentiality agreements and procedures, to establish and protect our proprietary rights. For a variety of reasons, however, these steps may not fully protect us, including due to inherent limitations on the ability to enforce these rights. If we are unsuccessful in protecting or enforcing our intellectual property rights, our business, competitive position, results of operations and financial condition could be adversely affected.

We have been accused of infringing the intellectual property rights of others and will likely face similar accusations in the future.

We routinely receive notices from third parties or are named in lawsuits filed by third parties claiming we have infringed or are infringing their intellectual property rights. We are currently responding to several of these notices and claims and expect this industry-wide trend will continue. If these claims succeed, we could be required to pay significant monetary damages, to cease using the applicable technology or to make royalty payments to continue using the applicable technology. If we are required to take one or more of these actions, our revenues or profit margins may decline, our operations could be materially impaired or we may be required to stop selling or redesign one or more of our products or services, any of which could have a material adverse impact on our business. Similarly, from time to time, we may need to obtain the right to use certain patents or other intellectual property from third parties to be able to offer new products and services. If we cannot obtain rights to use any required technology from a third party on reasonable terms, our ability to offer new products and services may be prohibited, restricted, made more costly or delayed.

Failure to extend or renegotiate our collective bargaining agreements or work stoppages could have a material impact on us.

As of December 31, 2022, approximately 20% of our employees were members of various bargaining units represented by labor unions. Although we have agreements with these labor unions, we cannot predict the outcome of our future negotiations of these agreements. We may be unable to reach new agreements, and union employees may engage in strikes, work slowdowns or other labor actions, which could materially disrupt our ability to provide services and increase our costs. Even if we succeed in reaching new or replacement agreements, they may impose significant new costs on us that impair our competitive position.

Our international operations expose us to various regulatory, currency, tax, legal and other risks.

Our international operations are subject to U.S. and non-U.S. laws and regulations regarding operations in international jurisdictions in which we provide services. These numerous and sometimes conflicting laws and regulations include anti-corruption laws, anti-competition laws, trade restrictions, economic sanctions, tax laws, immigration laws, environmental laws, privacy laws and accounting requirements. Many of these laws are complex and change frequently. There is a risk that these laws or regulations may materially restrict our ability to deliver services in various international jurisdictions or expose us to the risk of fines, penalties or license revocations if we are determined to have violated applicable laws or regulations. Additionally, these laws or regulations may potentially impact our customers and result in foregone business or penalties to us if we fail to comply with any applicable sanctions or restrictions on our activities.

Many non-U.S. laws and regulations relating to communications services are more restrictive than U.S. laws and regulations. We are subject to the GDPR of the European Union and the United Kingdom, as well as various other laws governing privacy rights, data protection and cybersecurity laws in other regions. These laws and

regulations continue to proliferate and evolve, are becoming more complex and increasingly conflict among the various countries in which we operate, which has resulted in greater compliance risk and cost for us. Moreover, many countries are still in the early stages of providing for and adapting to a liberalized telecommunications market, which could make it more difficult for us to obtain licenses and conduct our operations.

In addition to these international regulatory risks, some of the other risks inherent in conducting business internationally include: economic, social and political instability, with the attendant risks of terrorism, kidnapping, extortion, civic unrest, potential seizure or nationalization of assets; currency and exchange controls, repatriation restrictions and fluctuations in currency exchange rates, including, without limitation, the matters outlined in Note 1—Background and Summary of Significant Accounting Policies — Foreign Currency; problems collecting accounts receivable; the difficulty or inability in certain jurisdictions to enforce contract or intellectual property rights; reliance on certain third parties with whom we lack extensive experience; supply chain challenges; and challenges in securing and maintaining the necessary physical and telecommunications infrastructure.

Our operations and financial results could be impacted by changes in multilateral conventions, treaties, tariffs or other arrangements between or among sovereign nations, including most recently Brexit.

Financial Risks

Our significant debt levels expose us to a broad range of risks.

As of December 31, 2022, we had approximately \$10.4 billion of outstanding consolidated secured indebtedness, \$10.1 billion of outstanding consolidated unsecured indebtedness (excluding (i) finance lease obligations, (ii) unamortized premiums, net and (iii) unamortized debt issuance costs) and \$2.2 billion of unused borrowing capacity under our Revolving Credit Facility.

Our significant levels of debt and related debt service obligations could adversely affect us in several respects, including:

- requiring us to dedicate a substantial portion of our cash flow from operations to the payment of interest and principal on our debt, thereby reducing the funds available to us for other purposes, including acquisitions, capital expenditures and strategic initiatives;
- hindering our ability to capitalize on business opportunities and to plan for or react to changing market, industry, competitive or economic conditions;
- making us more vulnerable to economic or industry downturns, including interest rate increases (especially with respect to our variable rate debt);
- placing us at a competitive disadvantage compared to less leveraged companies;
- adversely impacting other parties' perception of Lumen, including but not limited to existing or potential customers, vendors, employees or creditors;
- making it more difficult or expensive for us to obtain any necessary future financing or refinancing, including the risk that this could force us to sell assets or take other less desirable actions to raise capital; and
- increasing the risk that we may not meet the financial or non-financial covenants contained in our debt agreements or timely make all required debt payments, either of which could result in the acceleration of some or all of our outstanding indebtedness.

The effects of each of these factors could be intensified if we increase our borrowings or experience any downgrade in our credit ratings or those of our affiliates. Subject to certain limitations and restrictions, the current terms of our debt instruments and our subsidiaries' debt instruments permit us or them to incur additional indebtedness.

We expect to periodically require financing, and we cannot assure you we will be able to obtain such financing on terms that are acceptable to us, or at all.

We expect to periodically require financing in the future to refinance existing indebtedness and potentially for other purposes. Our ability to arrange additional financing will depend on, among other factors, our financial position, performance, credit ratings, and debt covenants, as well as prevailing market conditions and other factors beyond our control. Prevailing market conditions could be adversely affected by (i) general market conditions, such as disruptions in domestic or overseas sovereign or corporate debt markets, geo-political instabilities, trade restrictions, pandemics, contractions or limited growth in the economy or other similar adverse economic developments in the U.S. or abroad, and (ii) specific conditions in the communications industry. Instability in the domestic or global financial markets has from time to time resulted in periodic volatility and disruptions in capital markets that have partially or severely limited the ability of leveraged companies like us to obtain debt financing. For these and other reasons, we can give no assurance additional financing for any of these purposes will be available on terms acceptable to us, or at all.

If we are unable to make required debt payments or refinance our debt, we would likely have to consider other options, such as selling assets, issuing additional securities, cutting or delaying costs or otherwise reducing our cash requirements, or negotiating with our lenders to restructure our applicable debt. Our current and future debt instruments may restrict, or market or business conditions may limit, our ability to complete some of these actions on favorable terms, or at all. For these and other reasons, we cannot assure you we could implement these steps in a sufficient or timely manner, or at all. Nor can we assure you that these steps, even if successfully implemented, would not be detrimental to our operations, financial performance or future prospects.

We have a highly complex debt structure, which could impact the rights of our investors.

Lumen Technologies, Inc. and various of its subsidiaries owe substantial sums pursuant to various debt and financing arrangements, certain of which are guaranteed by other principal subsidiaries. Over half of the debt of Lumen Technologies, Inc. is guaranteed by certain of its principal domestic subsidiaries, some of which have pledged substantially all of their assets (including certain of their respective subsidiaries) to secure their guarantees. The remainder of the debt of Lumen Technologies, Inc. is neither guaranteed nor secured. Nearly half of the debt of Level 3 Financing, Inc. is (i) secured by a pledge of substantially all of its assets and (ii) guaranteed on a secured basis by certain of its affiliates. The remainder of the debt of Level 3 Financing, Inc. is not secured by any of its assets, but is guaranteed on an unsecured basis by certain of its affiliates. As of the date of this annual report, substantial amounts of debt are also owed by two direct or indirect subsidiaries of Qwest Communications International Inc. Most of the nearly 300 subsidiaries of Lumen Technologies, Inc. have neither borrowed money nor guaranteed any of the debt of Lumen Technologies, Inc. or its affiliates. As such, investors in our consolidated debt instruments should be aware that (i) determining the priority of their rights as creditors is a complex matter which is substantially dependent upon the assets and earning power of the entities that issued or guaranteed (if any) the applicable debt and (ii) a substantial portion of such debt is structurally subordinated to all liabilities of the non-guarantor subsidiaries of Lumen Technologies, Inc. to the extent of the value of those subsidiaries that are obligors.

Our various debt agreements include restrictions and covenants that could (i) limit our ability to conduct operations or borrow additional funds, (ii) restrict our ability to engage in inter-company transactions, and (iii) lead to the acceleration of our repayment obligations in certain instances.

Under our consolidated debt and financing arrangements, the issuer of the debt is subject to various covenants and restrictions, the most restrictive of which pertain to the debt of Lumen Technologies, Inc. and Level 3 Financing, Inc.

Lumen Technologies, Inc.'s senior secured credit facilities and secured notes contain several significant limitations restricting our ability to, among other things, borrow additional money or issue guarantees; pay dividends or other distributions to shareholders; make loans; create liens on assets; sell assets; transact with its affiliates and engage in mergers, consolidations or other similar transactions. These restrictive covenants could have a material adverse impact on our ability to operate or reconfigure our business, to issue additional priority debt, to pursue acquisitions, divestitures or strategic transactions, or to otherwise pursue our plans and strategies.

The debt and financing arrangements of Level 3 Financing, Inc. contain substantially similar limitations that restrict their operations on a standalone basis as a separate restricted group. Consequently, certain of these

covenants may significantly restrict our ability to engage in transactions with Level 3, including receiving cash from Level 3, or distributing cash from Level 3 to other of our affiliated entities.

Lumen Technologies, Inc.'s senior secured credit facilities, as well as the term loan debt of Qwest Corporation, also contain financial maintenance covenants which are described further in Note 7—Long-Term Debt and Credit Facilities.

The failure of Lumen Technologies, Inc. or any of its subsidiaries to comply with the above-described restrictive or financial covenants could result in an event of default, which, if not cured or waived, could accelerate our debt repayment obligations. Certain of our debt instruments have cross-default or cross-acceleration provisions. When present, these provisions could have a wider impact on liquidity than might otherwise arise from a default or acceleration of a single debt instrument.

Our cash flows may not adequately fund all of our cash requirements.

Each segment of our business is very capital intensive. We expect to continue to require significant capital to pursue our Quantum Fiber buildout plans and to otherwise maintain, upgrade and expand our network infrastructure, based on several factors, including (i) changes in customers' service requirements; (ii) our continuing need to expand and improve our network to remain competitive and meet customer demand; and (iii) our regulatory commitments. Any failure to make appropriate capital expenditures could adversely impact our financial performance or prospects. We will also continue to need substantial amounts of cash to meet our fixed commitments and other business objectives, including without limitation funding our operating costs, maintenance expenses, debt repayments, tax obligations, periodic pension contributions and other benefits payments. As discussed elsewhere in this annual report, our revenues have decreased for several years, which, coupled with other factors, has placed downward pressure on our cash flows. For all these reasons, we cannot assure you our future cash flows from operating activities will be sufficient to fund all of our cash requirements in the manner currently contemplated.

As a holding company, we rely on payments from our operating companies to meet our obligations.

As a holding company, substantially all of our income and operating cash flow is dependent upon the earnings of our subsidiaries and their distribution of those earnings to us in the form of dividends, loans or other payments. As a result, we rely upon our subsidiaries to generate cash flows in amounts sufficient to fund our obligations, including the payment of our long-term debt. Our subsidiaries are separate and distinct legal entities and have no obligation to pay any amounts owed by us, except to the extent they have guaranteed such payments. Similarly, subject to limited exceptions for tax-sharing or cash management purposes, our subsidiaries have no obligation to make any funds available to us to repay our obligations, whether by dividends, loans or other payments. As discussed in greater detail elsewhere herein, restrictions imposed by credit instruments or other agreements applicable to Level 3 and certain of our other subsidiaries limit the amount of funds our subsidiaries are permitted to transfer to us, including the amount of dividends that may be paid to us. Moreover, our rights to receive assets of any subsidiary upon its liquidation or reorganization would be effectively subordinated to the claims of creditors of that subsidiary, including trade creditors. In addition, the laws under which our subsidiaries were organized typically restrict the amount of dividends they may pay. The ability of our subsidiaries to transfer funds could be further restricted under applicable state or federal tax laws, regulatory orders or regulations. For all these reasons, you should not assume our subsidiaries will be able in the future to generate and distribute to us cash in amounts sufficient to fund our cash requirements.

We may not be able to fully utilize our NOLs.

As of December 31, 2022, we had approximately \$1.0 billion of federal net operating loss carryforwards ("NOLs"), which remain subject to limitations under Section 382 of the Internal Revenue Code and related regulations ("Section 382"). These limitations could restrict our ability to use these NOLs in the amounts we project. In an effort to safeguard our NOLs, we have maintained an NOL rights agreement which is scheduled to lapse in late 2023.

At December 31, 2022, we also had substantial state NOLs which we believe are subject to legal and practical limitations on our ability to realize their full benefit. We cannot assure you we will be able to utilize these NOLs as projected or at all.

Increases in costs for pension and healthcare benefits for our active and retired employees may have a material impact on us.

As of December 31, 2022, our company-sponsored benefit plans that cover our current and former U.S.-based employees had approximately 25,000 active employee participants, approximately 58,000 active and retired employees and surviving spouses eligible for post-retirement healthcare benefits, approximately 22,000 pension retirees and approximately 7,000 former employees with vested pension benefits. As of such date, our domestic pension plans and our other domestic post-retirement benefit plans were substantially underfunded from an accounting standpoint. We also maintain benefit plans for a much smaller base of our non-U.S. employees. The cost to fund the pension and healthcare benefit plans for our active and retired employees has a significant impact on our profitability. Our costs of maintaining our pension and healthcare plans, and the future funding requirements for these plans, are affected by several factors, including investment returns on funds held by our applicable plan trusts; changes in prevailing interest rates and discount rates or other factors used to calculate the funding status of our plans; increases in healthcare costs generally or claims submitted under our healthcare plans specifically; the longevity and payment elections of our plan participants; changes in plan benefits; and the impact of the continuing implementation, modification or potential repeal of current federal healthcare and pension funding laws and regulations promulgated thereunder. Increased costs under these plans could reduce our profitability and increase our funding commitments to our pension plans.

See Note 11—Employee Benefits for additional information regarding the funded status of our pension plans and our other post-retirement benefit plans.

Lapses in our disclosure controls and procedures or internal control over financial reporting could materially and adversely affect us.

We maintain (i) disclosure controls and procedures designed to provide reasonable assurances regarding the accuracy and completeness of our SEC reports and (ii) internal control over financial reporting designed to provide reasonable assurance regarding the reliability and compliance with U.S. generally accepted accounting principles (“GAAP”) of our financial statements. We cannot assure you these measures will be effective. Our management previously identified two material weaknesses that, while successfully remediated during 2019, were costly to remediate and caused us to request an extension in order to timely file our annual report on Form 10-K for the year ended December 31, 2018.

If we are required to record additional intangible asset impairments, we will be required to record a significant charge to earnings and reduce our stockholders' equity.

As of December 31, 2022, approximately 42% of our total consolidated assets reflected on the consolidated balance sheet included in this annual report consisted of goodwill, customer relationships and other intangible assets (including goodwill and other intangible assets classified as assets held for sale). From time to time, including most recently in the fourth quarter of 2022 and in the fourth quarter of 2020, we have recorded large non-cash charges to earnings in connection with required reductions of the value of our intangible assets. If our intangible assets are determined to be impaired in the future, we may be required to record additional significant, non-cash charges to earnings during the period in which the impairment is determined to have occurred. Any such charges could, in turn, have a material adverse effect on our results of operation or financial condition.

High inflation could continue to adversely impact us.

Although inflation appears to be declining, during 2021 and 2022 our operations were impacted by the highest domestic inflation rates in decades. If inflation rates remain elevated, our operations will likely continue to be impacted. Potential impacts of high inflation include (i) lower revenue if inflationary pressures cause customers to defer, decrease or cancel their expenditures on our products and services, (ii) lower margins if we cannot offset the higher cost of our labor and supplies by raising our prices or reducing our other expenses, (iii) higher interest costs to the extent inflation places upwards pressure on prevailing interest rates and (iv) as noted above, potential difficulties retaining personnel if we do not match the salary increase expectations of our workforce.

We face other financial risks.

We face other financial risks, including among others the risk that:

- downgrades in our credit ratings or unfavorable financial analyst reports regarding us or our industry could adversely impact the liquidity or market prices of our outstanding debt or equity securities;
- a change of control of us or certain of our affiliates could accelerate a substantial portion of our outstanding indebtedness in an amount that we might not be able to repay;
- the tax provisions contained in the Inflation Reduction Act of 2022, including the 1% excise tax on net stock repurchases and the 15% corporate book minimum tax, might increase our federal taxes; and
- ongoing attempts of the United States, various foreign countries and supranational or international organizations to reform taxes or identify new tax sources could materially impact our taxes, or that one or more of our ongoing tax audits or examinations could result in tax liabilities that differ materially from those we have recognized in our consolidated financial statements.

Divestiture Risks

The completion of our planned EMEA divestiture is subject to several conditions.

As described further in Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business we have agreed to divest our EMEA business. The completion of the divestiture is subject to receipt of all requisite regulatory approvals in the U.S. and certain countries where the EMEA business operates, as well as the satisfaction of other customary conditions. We cannot assure you that this divestiture will be completed in the timeframes anticipated by us or at all.

The pendency of the EMEA divestiture could adversely affect our business.

The pendency of our EMEA divestiture could impact us in several ways, including (i) impacting relationships with our customers and vendors, (ii) restricting our operations due to certain specified operating covenants in the purchase agreement, (iii) diverting management's attention from operating our business in the ordinary course, and (iv) diminishing our ability to retain or attract employees due to concerns over future job security or responsibilities.

We may be unable to successfully separate our divested businesses from our retained business and realize the anticipated benefits of our recently completed and planned divestitures.

In connection with our planned EMEA divestiture, we have agreed to (i) complete certain restructuring transactions to segregate the divested business from our retained business, (ii) provide certain post-closing transition and commercial services to the purchasers, and (iii) receive certain post-closing services from the purchaser designed to ensure the continuity of services to our retained customers. Similarly, in connection with the 2022 divestitures of our Latin American business and a portion of our ILEC business, we completed internal restructurings and entered into multi-year agreements with the purchasers to provide certain transitional services and to provide or receive certain commercial services.

We anticipate that it will be challenging and time-consuming to segregate the businesses and provide transition services to the purchaser of our EMEA business, and to continue to support the businesses that we sold in 2022. Even if we successfully complete the EMEA divestiture and continue to successfully support the divested businesses, we may incur or experience (i) greater tax or other costs or realize fewer benefits than anticipated under our pre- and post-closing agreements with the purchasers, (ii) operational or commercial difficulties segregating the divested assets from our retained assets, (iii) disputes with the purchasers regarding the nature and sufficiency of the transition services we provide or the terms and conditions of our commercial agreements with the purchasers, (iv) potential disputes with creditors concerning the transactions or use of the proceeds therefrom, (v) higher vendor costs due to reduced economies of scale or other similar dis-synergies, (vi) lower productivity to the extent segregation of the divested businesses distracts or diverts personnel from the operation, digitization, and transformation of our retained business, (vii) losses or increased inefficiencies from stranded or underutilized assets, (viii) the loss of any customers dissatisfied with our services post-closing, (ix) challenges in retaining and

attracting personnel or (x) the loss of vendors or customers due to our inability to assign contracts with their consent.

The divestitures will reduce our future cash flows. If our remaining business fails to perform as expected, the divestitures could exacerbate certain of the other financial risks specified in this Item 1A, including our ability to fund all of our current cash requirements.

General Risk Factors

An outbreak of disease or similar public health threat, such as the recent COVID-19 pandemic, could have a material adverse impact on us.

An outbreak of disease or similar public health threat, such as the recent COVID-19 pandemic and its attendant detrimental impact on the worldwide economy, could have a material adverse impact on our operating results and financial condition. Even as efforts to contain the COVID-19 pandemic, including vaccinations, have fostered progress and eased governmental restrictions, new variants of the virus have continued to cause outbreaks and uncertainties. Variants of the virus continue to pose the risk that we or our employees, contractors, suppliers, customers and other business partners may be prevented from conducting business activities at expected levels through established processes. Future events regarding the pandemic, which are unpredictable and beyond our control, could continue impacting our operations. Accordingly, COVID-19, or any other future major public health crisis, may have negative impacts on our business in the future, and any future adverse impacts on our business may be worse than we anticipate.

Moreover, to the extent any of these risks and uncertainties adversely impact us, they may also have the effect of heightening many of the other risks described in this section "Item 1A. Risk Factors."

Unfavorable general economic, societal or environmental conditions could negatively impact us.

Unfavorable general economic, societal or environmental conditions, including unstable economic and credit markets, or depressed economic activity caused by trade wars, epidemics, pandemics, wars, societal unrest, rioting, civic disturbances, natural disasters, terrorist attacks, environmental disasters, political instability or other factors, could negatively affect our business or operations. While it is difficult to predict the ultimate impact of these general economic, societal or environmental conditions, they could adversely affect demand for some of our products and services and could cause customers to shift to lower-priced products and services or to delay or forego purchases of our products and services for a variety of reasons. Any one or more of these circumstances could continue to depress our revenue. Also, our customers may encounter financial hardships which could negatively impact their ability to make timely payments to us or to continuing doing business with us.

We currently do not pay dividends to our common shareholders and any decision to adopt or continue a stock repurchase plan is entirely discretionary.

We discontinued paying dividends to our holders of common stock in the fourth quarter of 2022, and have no current plans to pay dividends in respect of our common stock for the foreseeable future.

From time to time we adopt share repurchase plans. Holders of our common stock should be aware that repurchases of our common stock under any such plans are completely discretionary and may be suspended or discontinued at any time and for any reason without prior notice.

Shareholder or debtholder activism efforts could cause a material disruption to our business.

While we always welcome constructive input from our shareholders and regularly engage in dialogue with our shareholders to that end, activist shareholders may from time to time engage in proxy solicitations, advance shareholder proposals or otherwise attempt to effect changes or acquire control over us. Responding to these actions can be costly and time-consuming and may disrupt our operations and divert the attention of our board and management. These adverse impacts could be intensified if activist shareholders advocate actions that are not supported by other shareholders, our board or management. The recent increase in the activism of debtholders could increase the risk of claims being made under our debt agreements.

Our agreements and organizational documents and applicable law could similarly limit another party's ability to acquire us.

A number of provisions in our organizational documents and various provisions of applicable law or our Section 382 rights agreement may delay, defer or prevent a future takeover of us unless the takeover is approved by our board. These provisions (which are described further in our Registration Statement on Form 8-A/A filed with the SEC on March 2, 2015) could deprive our shareholders of any related takeover premium.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our property, plant and equipment consists principally of fiber-optic and metallic cables, high-speed transport equipment, electronics, switches, routers, cable landing stations, central office equipment, land and buildings related to our operations. Our gross property, plant and equipment consisted of the following components:

	As of December 31,	
	2022 ⁽⁵⁾	2021 ⁽⁵⁾
Land	2 %	2 %
Fiber, conduit and other outside plant ⁽¹⁾	37 %	38 %
Central office and other network electronics ⁽²⁾	39 %	38 %
Support assets ⁽³⁾	17 %	18 %
Construction in progress ⁽⁴⁾	5 %	4 %
Gross property, plant and equipment	100 %	100 %

(1) Fiber, conduit and other outside plant consists of fiber and metallic cable, conduit, poles and other supporting structures.

(2) Central office and other network electronics consists of circuit and packet switches, routers, transmission electronics and electronics providing service to customers.

(3) Support assets consist of buildings, cable landing stations, data centers, computers and other administrative and support equipment.

(4) Construction in progress includes inventory held for construction and property of the aforementioned categories that is under construction and has not yet been placed in service.

(5) These values exclude assets classified as held for sale.

We own a substantial portion of our telecommunications equipment required for our business. However, we also lease from third parties certain facilities, plant and equipment under various finance and operating lease arrangements when the leasing arrangements are more favorable to us than owning the assets. We also own and lease administrative offices in major metropolitan locations both in the United States and internationally, and own or lease domestic or overseas cable landing stations related to undersea and terrestrial cable systems. Substantially all of our network electronics equipment is located in buildings or on land that we own or lease, typically within our local service area. Outside of our local service area, our assets are generally located on real property pursuant to an agreement with the property owner or another person with rights to the property. It is possible that we may lose our rights under one or more of these agreements, due to their termination or expiration or in connection with legal challenges to our rights under such agreements.

Our net property, plant and equipment was approximately \$19.2 billion and \$20.9 billion at December 31, 2022 and 2021, respectively, excluding assets held for sale. Substantial portions of our property, plant and equipment are pledged to secure the long-term debt of our subsidiaries or the guarantee obligations of our subsidiary guarantors. For additional information, see Note 9—Property, Plant and Equipment to our consolidated financial statements in Item 8 of Part II of this report.

We have entered into various agreements regarding our unused office and technical space to reduce our ongoing operating expenses regarding such space.

ITEM 3. LEGAL PROCEEDINGS

The information contained under the subheadings "Principal Proceedings" and "Other Proceedings, Disputes and Contingencies" in Note 18—Commitments, Contingencies and Other Items to our consolidated financial statements included in Item 8 of Part II of this report is incorporated herein by reference.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is listed on the New York Stock Exchange ("NYSE") and the Berlin Stock Exchange and is traded under the symbol LUMN and CYTH, respectively.

At February 21, 2023, there were approximately 81,600 stockholders of record, although there were significantly more beneficial holders of our common stock.

Issuer Purchases of Equity Securities

Effective November 2, 2022, our Board of Directors authorized a new two-year program to repurchase up to an aggregate of \$1.5 billion of our outstanding common stock. During the three months ended December 31, 2022, we repurchased 33 million shares of our outstanding common stock in the open market. These shares were repurchased for an aggregate market price of \$200 million, or an average purchase price of \$6.07 per share. All repurchased common stock has been retired. For additional information, see Note 20—Repurchases of Lumen Common Stock to our consolidated financial statements included in Item 8 of Part II of this report.

The following table contains information about shares of our previously-issued common stock that were repurchased under our above-described Stock Repurchase Program:

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs
November 2022	28,413,768	\$ 6.16	28,413,768	\$ 1,325,011,442
December 2022	4,559,200	\$ 5.48	4,559,200	\$ 1,300,012,827

The following table contains information about shares of our previously-issued common stock that we withheld from employees upon vesting of their stock-based awards during the fourth quarter of 2022 to satisfy the related tax withholding obligations:

Period	Total Number of Shares Withheld for Taxes	Average Price Paid Per Share
October 2022	50,287	\$ 7.02
November 2022	10,629	6.04
December 2022	24,553	5.58
Total	85,469	

Equity Compensation Plan Information

See Item 12 of this report.

ITEM 6. [Reserved]

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

All references to "Notes" in this Item 7 of Part II refer to the Notes to Consolidated Financial Statements included in Item 8 of Part II of this report. Certain statements in this report constitute forward-looking statements. See "Special Note Regarding Forward-Looking Statements" immediately prior to Item 1 of Part I of this report for factors relating to these statements and "Risk Factors" in Item 1A of Part I of this report for a discussion of certain risk factors applicable to our business, financial condition, results of operations, liquidity or prospects.

Overview

We are an international facilities-based technology and communications company focused on providing our business and mass markets customers with a broad array of integrated products and services necessary to fully participate in our rapidly evolving digital world. We operate one of the world's most interconnected networks. Our platform empowers our customers to rapidly adjust digital programs to meet immediate demands, create efficiencies, accelerate market access, and reduce costs – allowing customers to rapidly evolve their IT programs to address dynamic changes. With approximately 160,000 on-net buildings and 400,000 route miles of fiber optic cable globally, we are among the largest providers of communications services to domestic and global enterprise customers. Our terrestrial and subsea fiber optic long-haul network throughout North America, Europe and Asia Pacific connects to metropolitan fiber networks that we operate. We provide services in over 60 countries, with most of our revenue being derived in the United States.

Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business

On August 1, 2022, affiliates of Level 3 Parent, LLC, an indirect wholly-owned subsidiary of Lumen Technologies, Inc., sold Lumen's Latin American business for pre-tax cash proceeds of approximately \$2.7 billion.

On October 3, 2022, we and certain of our affiliates sold the portion of our ILEC business conducted primarily within 20 Midwestern and Southeastern states. In exchange, we received \$7.5 billion of consideration, which was reduced by approximately \$0.4 billion of closing adjustments and partially paid through purchaser's assumption of approximately \$1.5 billion of our long-term consolidated indebtedness, resulting in pre-tax cash proceeds of approximately \$5.6 billion, subject to certain post-closing adjustments and indemnities.

Under agreements entered into on November 2, 2022 and February 8, 2023, affiliates of Level 3 Parent, LLC, have agreed to divest certain operations in EMEA to Colt Technology Services Group Limited, a portfolio company of Fidelity Investments, in exchange for \$1.8 billion in cash, subject to certain post-closing adjustments. Level 3 Parent, LLC expects to close the transaction as early as late 2023, following receipt of all requisite regulatory approvals in the U.S. and certain countries where the EMEA business operates, as well as the satisfaction of other customary conditions. The actual amount of our net after-tax proceeds from this divestiture could vary substantially from the amounts we currently estimate, particularly if we experience delays in completing the transaction or any of our other assumptions prove to be incorrect.

For more information, see (i) Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business to our consolidated financial statements in Item 8 of Part II of this report and (ii) the risk factors included in Item 1A of Part I of this report.

Impact of COVID-19 Pandemic and the Macroeconomic Environment

Societal, governmental and macroeconomic changes arising out of the COVID-19 pandemic have impacted us, our customers and our business in several ways since March 2020. Beginning in the second half of 2020 and continuing into 2022, we rationalized our leased footprint and ceased using 39 leased property locations that were underutilized. We did not further rationalize our lease footprint or incur material accelerated lease costs during the year ended December 31, 2022. However, in conjunction with our plans to continue to reduce costs, we expect to continue our real estate rationalization efforts and expect to incur additional accelerated lease costs in future periods.

Additionally, as discussed further elsewhere herein, the pandemic and macroeconomic changes arising therefrom have resulted in (i) increases in certain revenue streams and decreases in others, (ii) increases in overtime expenses during 2020 and 2021, (iii) operational challenges resulting from shortages of certain components and other supplies that we use in our business, (iv) delays in our cost transformation initiatives, and (v) delayed decision-making by certain of our customers. None of these effects, individually or in the aggregate, have to date materially impacted our financial performance or financial position.

The COVID-19 pandemic and other factors have led to increased fiber construction demand combined with increased construction labor rates that have reduced the number of fiber buildout projects that met our internal payback requirement. Thus far, we believe these factors have contributed to a delay in our Quantum Fiber buildouts, but otherwise have not had a significant impact on our business results.

We reopened our offices in April 2022 under a "hybrid" working environment, which will permit some of our employees the flexibility to work remotely at least some of the time for the foreseeable future.

If any of the above-listed factors intensify, our financial results could be materially impacted in a variety of ways, including by increasing our expenses, decreasing our revenues, further delaying our network expansion plans or otherwise interfering with our ability to deliver products and services. For additional information on the impacts of the pandemic, see (i) the remainder of this item, including "—Liquidity and Capital Resources— Overview of Sources and Uses of Cash" and (ii) Item 1A of this report.

Reporting Segments

Our reporting segments are currently organized as follows, by customer focus:

- **Business Segment:** Under our Business segment, we provide our products and services under four sales channels:
 - **International and Global Accounts ("IGAM"):** Our IGAM sales channel includes multinational and enterprise customers. We provide our products and services to global enterprise customers and carriers.
 - **Large Enterprise:** Under our large enterprise sales channel, we provide our products and services to large enterprises and the public sector, including the U.S. Federal government, state and local governments and research and education institutions.
 - **Mid-Market Enterprise:** Under our mid-market enterprise sales channel, we provide our products and services to medium-sized enterprises directly and through our indirect channel partners.
 - **Wholesale:** Under our wholesale sales channel, we provide our products and services to a wide range of other communication providers across the wireline, wireless, cable, voice and data center sectors.

As we have previously disclosed, we plan to update these sales channels beginning with our first quarterly report filed after this annual report.

- **Mass Markets Segment.** Under our Mass Markets segment, we provide products and services to residential and small business customers. At December 31, 2022, we served 3.0 million broadband subscribers under our Mass Markets segment.

See Note 17—Segment Information to our consolidated financial statements in Item 8 of Part II of this report for additional information.

We categorize our Business segment revenue among the following products and services categories:

- *Compute and Application Services*, which include our Edge Cloud services, IT solutions, Unified Communications and Collaboration ("UC&C"), data center, content delivery network ("CDN") and managed security services;
- *IP and Data Services*, which include Ethernet, IP, and VPN data networks, including software-defined wide area networks ("SD WAN") based services, Dynamic Connections and Hyper WAN;
- *Fiber Infrastructure Services*, which include dark fiber, optical services and equipment; and
- *Voice and Other*, which include Time Division Multiplexing ("TDM") voice, private line, and other legacy services.

We categorize our Mass Markets products and services revenue among the following categories:

- *Fiber Broadband*, under which we provide high speed services to residential and small business customers utilizing our fiber-based network infrastructure;
- *Other Broadband*, under which we provide primarily lower speed broadband services to residential and small business customers utilizing our copper-based network infrastructure; and
- *Voice and Other*, under which we derive revenues from (i) providing local and long-distance services, professional services, and other ancillary services, and (ii) federal broadband and state support payments.

Trends Impacting Our Operations

In addition to the above-described impact of the pandemic and its aftermath, our consolidated operations have been, and will continue to be, impacted by the following company-wide trends:

- Customers' demand for automated products and services and competitive pressures will require that we continue to invest in new technologies and automated processes to improve the customer experience and reduce our operating expenses.
- The increasingly digital environment and the growth in online video and gaming require robust, scalable network services. We are continuing to enhance our product capabilities and simplify our product portfolio based on demand and profitability to enable customers to have access to greater bandwidth.
- Businesses continue to adopt distributed, global operating models. We are expanding and enhancing our fiber network, connecting more buildings to our network to generate revenue opportunities and reducing our reliance upon other carriers.
- Changes in customer preferences and in the regulatory, technological and competitive environment are (i) significantly reducing demand for our more mature service offerings, commoditizing certain of our other offerings, or resulting in volume or rate reductions for other of our offerings and (ii) also creating certain opportunities for us arising out of increased demand for lower latency provided by Edge computing and for faster and more secure data transmissions.
- The operating margins of several of our newer, more technologically advanced services, some of which may connect to customers through other carriers, are lower than the operating margins on our traditional, on-net wireline services.
- Our expenses will be impacted by higher vendor costs, reduced economies of scale and other dis-synergies due to our 2022 divestitures.

- Declines in our traditional wireline services and other more mature offerings have necessitated right-sizing our cost structures to remain competitive.

The amount of support payments we receive from governmental agencies has decreased substantially since December 31, 2021. Inflation during 2021 and 2022 placed downward pressure on our margins and likely contributed to delayed decision-making by certain of our customers, which are trends that will likely continue to impact us as long as inflation rates remain elevated. These and other developments and trends impacting our operations are discussed elsewhere in this Item 7.

Results of Operations

In this section, we discuss our overall results of operations and highlight special items that are not included in our segment results. In "Segment Results" we review the performance of our two reporting segments in more detail. Results in this section include the results of our Latin American and ILEC businesses prior to their sale on August 1, 2022 and October 3, 2022, respectively.

Revenue

The following table summarizes our consolidated operating revenue recorded under each of our two segments and in our four revenue sales channels within the Business segment described above:

	Years Ended December 31,			2022 vs 2021 % Change	2021 vs 2020 % Change
	2022	2021	2020		
	(Dollars in millions)				
Business Segment:					
International & Global Accounts	\$ 3,645	4,083	4,137	(11)%	(1)%
Large Enterprise	3,409	3,771	3,961	(10)%	(5)%
Mid-Market Enterprise	2,465	2,649	2,901	(7)%	(9)%
Wholesale	3,520	3,616	3,809	(3)%	(5)%
Business Segment Revenue	13,039	14,119	14,808	(8)%	(5)%
Mass Markets Segment Revenue	4,439	5,568	5,904	(20)%	(6)%
Total operating revenue	\$ 17,478	19,687	20,712	(11)%	(5)%

Our consolidated operating revenue decreased by \$2.2 billion for the year ended December 31, 2022 as compared to the year ended December 31, 2021 due to revenue declines in all of our revenue categories listed above, in addition to the sale of our Latin American and ILEC businesses as of August 1, 2022 and October 3, 2022, respectively. Our consolidated revenue decreased by \$1.0 billion for the year ended December 31, 2021 compared to the year ended December 31, 2020 due to revenue declines in all of our revenue categories listed above. See our segment results below for additional information.

Operating Expenses

The following table summarizes our operating expenses for the year ended December 31, 2022 and 2021. For information regarding expenses for the year ended December 31, 2020, see "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of Part II of our Annual Report Form 10-K for the year ended December 31, 2021.

	Years Ended December 31,		% Change
	2022	2021	
	(Dollars in millions)		
Cost of services and products (exclusive of depreciation and amortization)	\$ 7,868	8,488	(7)%
Selling, general and administrative	3,078	2,895	6 %
Gain on sale of businesses	(773)	—	nm
Loss on disposal groups held for sale	700	—	nm
Depreciation and amortization	3,239	4,019	(19)%
Goodwill impairment	3,271	—	nm
Total operating expenses	\$ 17,383	15,402	13 %

nm Percentages greater than 200% and comparisons between positive and negative values or to/from zero values are considered not meaningful.

Cost of Services and Products (exclusive of depreciation and amortization)

Cost of services and products (exclusive of depreciation and amortization) decreased by \$620 million for the year ended December 31, 2022 as compared to the year ended December 31, 2021. This decrease was primarily due to the sale of the Latin American and ILEC businesses, as well as reductions in employee-related expense from lower headcount and lower facility costs and network expenses.

Selling, General and Administrative

Selling, general and administrative expenses increased by \$183 million for the year ended December 31, 2022 as compared to the year ended December 31, 2021. The increase in selling, general and administrative expenses was primarily due to gains on sales of assets during the year ended December 31, 2021 as well as higher professional fees during the year ended December 31, 2022 associated with facilitating the divestitures of our Latin American and ILEC businesses. These increases were partially offset by lower expenses due to the sale of the Latin American and ILEC businesses.

Gain on Sale of Businesses and Loss on Disposal Groups Held for Sale

For a discussion of the gain on the sale of the Latin American and ILEC businesses and the loss on disposal groups held for sale that we recognized for the year ended December 31, 2022, see Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business.

Depreciation and Amortization

The following table provides detail of our depreciation and amortization expense:

	Years Ended December 31,		% Change
	2022	2021	
	(Dollars in millions)		
Depreciation	\$ 2,133	2,671	(20)%
Amortization	1,106	1,348	(18)%
Total depreciation and amortization	\$ 3,239	4,019	(19)%

Depreciation expense decreased by \$538 million for the year ended December 31, 2022 as compared to the year ended December 31, 2021 primarily due to the discontinuation during the third quarter of 2021 of the depreciation of the tangible assets of our recently divested Latin American and ILEC businesses and the discontinuation during the fourth quarter of 2022 of the depreciation of the tangible assets of our planned divestiture of our EMEA business, resulting in an aggregate decrease of \$359 million of depreciation expense during the year ended December 31, 2022 as compared to the year ended December 31, 2021. In addition, depreciation expense decreased \$193 million due to the early retirement of certain copper-based infrastructure during the fourth quarter of 2021 and \$38 million due to the impact of annual rate depreciable life changes, which was partially offset by higher depreciation expense of \$61 million associated with net growth in depreciable assets.

Amortization expense decreased by \$242 million for the year ended December 31, 2022 as compared to the year ended December 31, 2021. The decrease was primarily due to a decrease of \$119 million resulting from certain customer relationship intangible assets becoming fully amortized at the end of the first quarter 2021, a decrease of \$50 million associated with net reductions in amortizable assets, a decrease of \$42 million due to the discontinuation during third quarter of 2021 of the amortization of the intangible assets of our recently divested Latin American and ILEC businesses and the discontinuation during the fourth quarter of 2022 of the amortization of the intangible assets of our planned divestiture of our EMEA business and a \$16 million decrease due to accelerated amortization for decommissioned applications.

Further analysis of our segment operating expenses by segment is provided below in "Segment Results."

Goodwill Impairments

We are required to perform impairment tests related to our goodwill annually, which we perform as of October 31, or sooner if an indicator of impairment occurs.

We report under two segments: Business and Mass Markets. As of December 31, 2022, we have three reporting units for goodwill impairment testing, which are (i) Mass Markets, (ii) North America Business ("NA Business") and (iii) Asia Pacific ("APAC") region. Prior to the planned divestiture of the EMEA business, the EMEA region was also a reporting unit and was tested for impairment in the pre-classification test as of October 31, 2022 discussed below. Prior to its August 1, 2022 divestiture, the Latin American ("LATAM") region was also a reporting unit.

When we performed our impairment tests during the fourth quarter of 2022, we concluded that the estimated fair value of certain of our reporting units was less than our carrying value of equity as of our testing date. As a result, we recorded non-cash, non-tax-deductible goodwill impairment charges aggregating to \$3.3 billion in the fourth quarter of 2022. When we performed our annual impairment test in the fourth quarter of 2021, we concluded it was more likely than not that the fair value of each of our reporting units exceeded the carrying value of equity of our reporting units. Therefore, we concluded no impairment existed as of our annual assessment date in the fourth quarter of 2021. When we performed our impairment tests during the fourth quarter of 2020, we concluded that the estimated fair value of certain of our reporting units was less than our carrying value of equity as of our testing date. As a result, we recorded non-cash, non-tax-deductible goodwill impairment charges aggregating to \$2.6 billion in the fourth quarter of 2020.

See Note 3—Goodwill, Customer Relationships and Other Intangible Assets to our consolidated financial statements in Item 8 of Part II of this report for further details on these tests and impairment charges.

Other Consolidated Results

The following tables summarize our total other expense, net and income tax expense:

	Years Ended December 31,		% Change
	2022	2021	
	(Dollars in millions)		
Interest expense	\$ (1,332)	(1,522)	(12)%
Other income (expense), net	246	(62)	nm
Total other expense, net	<u>\$ (1,086)</u>	<u>(1,584)</u>	<u>(31)%</u>
Income tax expense	<u>\$ 557</u>	<u>668</u>	<u>(17)%</u>

Interest Expense

Interest expense decreased by \$190 million for the year ended December 31, 2022 as compared to the year ended December 31, 2021. The decrease was primarily due to the decrease in average long-term debt from \$30.4 billion to \$24.8 billion, which was partially offset by the increase in the average interest rate of 4.82% to 5.14%.

Other Income (Expense), Net

Other income (expense), net reflects certain items not directly related to our core operations, including (i) gains and losses on extinguishments of debt, (ii) components of net periodic pension and post-retirement benefit costs, (iii) foreign currency gains and losses, (iv) our share of income from partnerships we do not control, (v) interest income, (vi) gains and losses from non-operating asset dispositions, (vii) income from transition and separation services provided by us to the purchasers of our Latin American business and ILEC business, and (viii) other non-core items.

	Years Ended December 31,	
	2022	2021
	(Dollars in millions)	
Net gain on extinguishment of debt	\$ 214	8
Pension and post-retirement net periodic income (expense)	1	(295)
Foreign currency gain (loss)	12	(28)
(Loss) gain on investment in limited partnership	(83)	138
Loss on investment in equity securities	(109)	—
Transition and separation services	152	—
Other	59	115
Total other income (expense), net	<u>\$ 246</u>	<u>(62)</u>

The change of \$296 million in pension and post-retirement net periodic income (expense) for the year ended December 31, 2022 as compared to the year ended December 31, 2021 is primarily driven by settlement charges in 2021 associated with the acceleration of the recognition of a portion of previously unrecognized actuarial losses in the Lumen Combined Pension Plan. Other income (expense), net for the year ended December 31, 2021 also included a distribution from a previously dissolved captive insurance company and other non-core items. See Note 14—Fair Value of Financial Instruments to our consolidated financial statements in Item 8 of Part II of this report for more information regarding the losses for the year ended December 31, 2022 and the gain for the year ended December 31, 2021 recognized on the investment in a limited partnership and investment in equity securities. The net gain on extinguishment of debt for the year ended December 31, 2022 was a result of multiple transactions in which our debt was reacquired below its carrying value. See Note 7—Long-Term Debt and Credit Facilities to our consolidated financial statements in Item 8 of Part II of this report for more information regarding our net gains on extinguishment of debt.

Income Tax Expense

For the years ended December 31, 2022 and 2021, our effective income tax rate was (56.2)% and 24.7%, respectively. The effective tax rate for the year ended December 31, 2022 includes a \$682 million unfavorable impact of a non-deductible goodwill impairment and a \$128 million unfavorable impact as a result of the sale of our Latin American business. See Note 16—Income Taxes to our consolidated financial statements in Item 8 of Part II of this report and "Critical Accounting Policies and Estimates—Income Taxes" below for additional information.

Segment Results

General

Reconciliation of segment revenue to total operating revenue is below. The results presented in this section include results of our Latin American and ILEC businesses prior to their sale on August 1, 2022 and October 3, 2022, respectively:

	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Operating revenue			
Business	\$ 13,039	14,119	14,808
Mass Markets	4,439	5,568	5,904
Total operating revenue	\$ 17,478	19,687	20,712

Reconciliation of segment EBITDA to total adjusted EBITDA is below:

	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Adjusted EBITDA			
Business	\$ 8,678	9,453	9,885
Mass Markets	3,754	4,876	5,122
Total segment EBITDA	12,432	14,329	15,007
Operations and Other EBITDA	(5,729)	(5,905)	(6,518)
Total adjusted EBITDA	\$ 6,703	8,424	8,489

For additional information on our reportable segments and product and services categories, see Note 4—Revenue Recognition and Note 17—Segment Information to our consolidated financial statements in Item 8 of Part II of this report.

Business Segment

	Years Ended December 31,			Percent Change	
	2022	2021	2020	2022 vs 2021	2021 vs 2020
	(Dollars in millions)				
Business Segment Product Categories:					
Compute and Application Services	\$ 1,665	1,742	1,735	(4)%	— %
IP and Data Services	5,771	6,207	6,422	(7)%	(3)%
Fiber Infrastructure Services	2,152	2,258	2,277	(5)%	(1)%
Voice and Other	3,451	3,912	4,374	(12)%	(11)%
Total Business Segment Revenue	13,039	14,119	14,808	(8)%	(5)%
Expenses:					
Total expense	4,361	4,666	4,923	(7)%	(5)%
Total adjusted EBITDA	\$ 8,678	9,453	9,885	(8)%	(4)%

Year ended December 31, 2022 compared to the years ended December 31, 2021 and December 31, 2020

Business segment revenue decreased \$1.1 billion for the year ended December 31, 2022 compared to December 31, 2021 and decreased \$689 million for the year ended December 31, 2021 compared to December 31, 2020. The 2022 changes in all product categories were impacted negatively by both the sale of the Latin American business on August 1, 2022 and the sale of the ILEC business on October 3, 2022. In addition to the impact of these divestitures, the changes reflected in the table above were primarily due to the following factors:

- Compute and Application Services decreased for the year ended December 31, 2022 compared to December 31, 2021 due to a contract ending in the Public Sector within our Large Enterprise sales channel and lower colocation revenue in our Wholesale sales channel, which were partially offset by higher IT Solutions revenue in our Wholesale sales channel.
- Compute and Application Services increased for the year ended December 31, 2021 compared to December 31, 2020 driven by growth in Managed Security and IT Solutions services to Public Sector customers and an increase in colocation and data center services in our IGAM sales channel. These increases were partially offset by a large customer disconnect for IT Solutions, lower rates for content delivery network services within our IGAM sales channel and a decrease in Cloud Services within our Large Enterprise and IGAM sales channels.
- IP and Data Services decreased during both periods due to declines in traditional VPN networks and continued declines in Ethernet revenue across all our sales channels, partially offset by an increase in IP services across multiple sales channels.
- Fiber Infrastructure Services decreased for the year ended December 31, 2022 compared to December 31, 2021 due to lower equipment and dark fiber revenue in our Large Enterprise sales channel and lower wavelenghts revenue in our IGAM sales channel, partially offset by growth in wavelenghts revenue in our Wholesale sales channel.
- Fiber Infrastructure Services decreased for the year ended December 31, 2021 compared to December 31, 2020 due to lower equipment revenue in our Large Enterprise sales channel and lower broadband revenue in all sales channels, partially offset by growth in dark fiber and wavelenghts revenue primarily from our IGAM and Wholesale sales channels.
- Voice and Other decreased during both periods due to continued decline of legacy voice, private line and other services to customers across all of our sales channels. Additionally, voice services revenue decreased for the year ended December 31, 2021 compared to December 31, 2020, which had in-part benefited from higher COVID-related demand.

The decrease in Business segment revenue for the year ended December 31, 2022 was also driven by \$54 million of unfavorable foreign currency adjustments as compared to December 31, 2021. The decrease in Business segment revenue for the year ended December 31, 2021 was slightly offset by \$16 million of favorable foreign currency adjustments for the year ended December 31, 2021 as compared to December 31, 2020.

Business segment expense decreased by \$305 million for the year ended December 31, 2022 compared to December 31, 2021 primarily due to lower cost of sales and external commissions both due to the decline in revenue, lower employee costs from lower headcount and a decrease in expenses primarily from the divestiture of the Latin American business. Business segment expenses decreased by \$257 million for the year ended December 31, 2021 compared to December 31, 2020, primarily due to lower cost of sales due to the decline in revenue and lower employee-related costs from lower headcount.

Business segment adjusted EBITDA as a percentage of revenue was 67% for the years ended December 31, 2022, 2021 and 2020.

Mass Markets Segment

	Years Ended December 31,			Percent Change	
	2022	2021	2020	2022 vs 2021	2021 vs 2020
(Dollars in millions)					
Mass Markets Product Categories:					
Fiber Broadband	\$ 604	524	427	15 %	23 %
Other Broadband	2,163	2,507	2,639	(14)%	(5)%
Voice and Other	1,672	2,537	2,838	(34)%	(11)%
Total Mass Markets Segment Revenue	4,439	5,568	5,904	(20)%	(6)%
Expenses:					
Total expense	685	692	782	(1)%	(12)%
Total adjusted EBITDA	\$ 3,754	4,876	5,122	(23)%	(5)%

Year ended December 31, 2022 compared to the years ended December 31, 2021 and December 31, 2020

Mass Markets segment revenue decreased by \$1.1 billion for the year ended December 31, 2022 compared to December 31, 2021 and decreased \$336 million for the year ended December 31, 2021 compared to December 31, 2020. The 2022 changes in all product categories were impacted negatively by the sale of the ILEC business. In addition to the impact of this divestiture, the changes reflected in the table above were primarily due to the following factors:

- Fiber Broadband revenue increased for the year ended December 31, 2022 compared to December 31, 2021 and increased for the year ended December 31, 2021 compared to year ended December 31, 2020 driven by growth in fiber customers associated with our continued increase in enabled units from our Quantum Fiber buildout.
- Other Broadband revenue decreased during both periods as a result of customer losses in our lower speed copper-based broadband services.
- Voice and Other decreased for the year ended December 31, 2022 compared to December 31, 2021 due to (i) a net reduction in CAF II revenue due to the conclusion of the CAF II program on December 31, 2021 and (ii) the continued loss of legacy voice customers. The decrease for the year ended December 31, 2021 compared to year ended December 31, 2020 were primarily due to continued losses of legacy voice customers and our exit of the Prism video product.

Mass Markets segment expense decreased by \$7 million for the year ended December 31, 2022 compared to December 31, 2021 and decreased \$90 million for the year ended December 31, 2021 compared to December 31, 2020. Decreases in expenses for the year ended December 31, 2022 compared to December 31, 2021 were primarily due to the divestiture of the ILEC business and lower employee costs, offset by higher bad debt expense. Decreases for the year ended December 31, 2021 compared to December 31, 2020 were primarily due to lower employee-related costs from lower headcount, lower costs of sales driven by the decrease in Prism operating costs and lower overall revenue, and higher bad debt expense for the year ended December 31, 2020 due to the COVID-19 induced economic slowdown. These decreases were partially offset by higher network-related expenses for the year ended December 31, 2021.

Mass Markets segment adjusted EBITDA as a percentage of revenue was 85%, 88% and 87% for the years ended December 31, 2022, 2021 and 2020, respectively.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with accounting principles that are generally accepted in the United States. The preparation of these consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of our assets, liabilities, revenue and expenses. We have identified certain policies and estimates as critical to our business operations and the understanding of our past or present results of operations related to (i) goodwill, customer relationships and other intangible assets; (ii) pension and post-retirement benefits; (iii) loss contingencies and litigation reserves and (iv) income taxes. These policies and estimates are considered critical because they had a material impact, or they have the potential to have a material impact, on our consolidated financial statements and because they require us to make significant judgments, assumptions or estimates. We believe that our estimates, judgments and assumptions made when accounting for the items described below were reasonable, based on information available at the time they were made. However, actual results may differ from those estimates, and these differences may be material.

Goodwill, Customer Relationships and Other Intangible Assets

We have a significant amount of goodwill and indefinite-lived intangible assets that are assessed at least annually for impairment. At December 31, 2022, goodwill and intangible assets totaled \$18.8 billion (excluding goodwill and other intangible assets classified as assets held for sale), or 41%, of our total assets. The impairment analyses of these assets are considered critical because of their significance to us and our segments and the subjective nature of certain assumptions used to estimate fair value.

We have assigned our goodwill balance to our segments at December 31, 2022 as follows:

	Business	Mass Markets	Total
	(Dollars in millions)		
As of December 31, 2022	\$ 7,906	4,751	12,657

Intangible assets arising from business combinations, such as goodwill, customer relationships, capitalized software, trademarks and tradenames, are initially recorded at estimated fair value. We amortize customer relationships primarily over an estimated life of 7 to 14 years, using the straight-line method, depending on the customer. Certain customer relationship intangible assets became fully amortized at the end of the first quarter 2021 using the sum-of-years-digits method, which is no longer used for any of our remaining intangible assets. We amortize capitalized software using the straight-line method primarily over estimated lives ranging up to 7 years. We amortize our other intangible assets using the straight-line method over an estimated life of 9 to 20 years. Other intangible assets not arising from business combinations are initially recorded at cost. Where there are no legal, regulatory, contractual or other factors that would reasonably limit the useful life of an intangible asset, we classify the intangible asset as indefinite-lived and such intangible assets are not amortized.

Our long-lived intangible assets, other than goodwill, with indefinite lives are assessed for impairment annually, or, under certain circumstances, more frequently, such as when events or changes in circumstances indicate there may be an impairment. These assets are carried at the estimated fair value at the time of acquisition and assets not acquired in acquisitions are recorded at historical cost. However, if their estimated fair value is less than their carrying amount, we recognize an impairment charge for the amount by which the carrying amount of these assets exceeds their estimated fair value.

Our goodwill was derived from numerous acquisitions where the purchase price exceeded the fair value of the net assets acquired.

We are required to reassign goodwill to reporting units whenever reorganizations of our internal reporting structure changes the composition of our reporting units. Goodwill is reassigned to the reporting units using a relative fair value approach. When the fair value of a reporting unit is available, we allocate goodwill based on the relative fair value of the reporting units. When fair value is not available, we utilize an alternative allocation methodology that we believe represents a reasonable approximation of the fair value of the operations being reorganized. For additional information on our segments, see Note 17—Segment Information to our consolidated financial statements in Item 8 of Part II of this report.

We are required to assess our goodwill for impairment annually, or more frequently if an event occurs or circumstances change that indicates it is more likely than not the fair values of any of our reporting units were less than their carrying values. In assessing goodwill for impairment, we may first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value.

Our annual impairment assessment date for goodwill is October 31, at which date we assess our reporting units. We report two segments: Business and Mass Markets. At October 31, 2022, under these segments, we had four reporting units for goodwill impairment testing, which are (i) Mass Markets (ii) North America Business ("NA Business"), (iii) Europe, Middle East and Africa ("EMEA") region and (iv) Asia Pacific ("APAC") region. Prior to its August 1, 2022 divestiture, the Latin American ("LATAM") region was also a reporting unit. At October 31, 2020, we used eight reporting units for goodwill impairment testing, which were consumer, small and medium business, enterprise, wholesale, North American global accounts ("NA GAM"), EMEA, LATAM and APAC.

Our reporting units are not discrete legal entities with discrete full financial statements. Our assets and liabilities are employed in and relate to the operations of multiple reporting units and are allocated to individual reporting units based on their relative revenue or earnings before interest, taxes depreciation and amortization ("EBITDA"). For each reporting unit, we compare its estimated fair value of equity to its carrying value of equity that we assign to the reporting unit. If the estimated fair value of the reporting unit is greater than its carrying value, we conclude that no impairment exists. If the estimated fair value of the reporting unit is less than the carrying value, we record a non-cash impairment charge equal to the excess amount. Depending on the facts and circumstances, we typically estimate the fair value of our reporting units by considering either or both of (i) a discounted cash flow method, which is based on the present value of projected cash flows over a discrete projection period and a terminal value, which is based on the expected normalized cash flows of the reporting units following the discrete projection period, and (ii) a market approach, which includes the use of multiples of publicly-traded companies whose services are comparable to ours. With respect to our analysis using the discounted cash flow method, the timing and amount of projected cash flows under these forecasts require estimates developed from our long-range plan, which is informed by wireline industry trends, the competitive landscape, product lifecycles, operational initiatives, capital allocation plans and other company-specific and external factors that influence our business. These projected cash flows consider recent historical results and are consistent with the Company's short-term financial forecasts and long-term business strategies. The development of these projected cash flows, and the discount rate applied to such cash flows, is subject to inherent uncertainties, and actual results could vary significantly from such estimates. Our determination of the discount rate is based on a weighted average cost of capital approach, which uses a market participant's cost of equity and after-tax cost of debt and reflects certain risks inherent in the projected cash flows. With respect to our analysis using the market approach, the fair value of a reporting unit is estimated based upon a market multiple applied to the reporting unit's revenue and EBITDA, adjusted for an appropriate control premium based on recent market transactions. The fair value of reporting units estimated using revenue and EBITDA market multiples are weighted depending on the characteristics of the individual reporting unit to determine the estimated fair value under the market approach. We also reconcile the estimated fair values of the reporting units to our market capitalization to conclude whether the indicated control premium is reasonable in comparison to recent transactions in the marketplace. Declines in our stock price have in the past caused an impairment of our goodwill, and future declines in our stock price could potentially cause additional impairments of our goodwill. Changes in the underlying assumptions that we use in allocating the assets and liabilities to reporting units under either the discounted cash flow or market approach method can result in materially different determinations of fair value. We performed sensitivity analyses that considered a range of discount rates and a range of EBITDA market multiples and we believe the estimates, judgments, assumptions and allocation methods used by us are reasonable, but changes in any of them can significantly affect whether we must incur impairment charges, as well as the size of such charges.

For additional information on our goodwill balances by segment and results of our impairment analyses, see Note 3—Goodwill, Customer Relationships and Other Intangible Assets to our consolidated financial statements in Item 8 of Part II of this report.

Pension and Post-retirement Benefits

We sponsor a noncontributory qualified defined benefit pension plan (referred to herein as our qualified pension plan, the "Lumen Combined Pension Plan" or the "Combined Pension Plan") for a substantial portion of our current and former employees in the United States. As of January 1, 2022, we spun off a new pension plan (the "Lumen Pension Plan") from the Combined Pension Plan in anticipation of the sale of the ILEC business on October 3, 2022. We recognized pension costs related to both plans through the sale of the ILEC business, at which time balances related to the Lumen Pension Plan were reflected in the calculation of our gain on the sale of the ILEC business and the pension obligation and assets of the Lumen Pension Plan were transferred to the purchaser. We also maintain post-retirement benefit plans that provide health care and life insurance benefits for certain eligible retirees.

In addition to the Lumen Combined Pension Plan, we also maintain several non-qualified pension plans for certain eligible highly compensated employees. Due to the insignificant impact of these non-qualified plans on our consolidated financial statements, we have excluded them from the following pension and post-retirement benefits disclosures for 2022, 2021 and 2020. See Note 11—Employee Benefits for additional information.

In 2022, approximately 62% of the Combined Pension Plan's January 1, 2022 net actuarial loss balance of \$2.2 billion was subject to amortization as a component of net periodic expense over the average remaining service period of 14 years for participating employees expected to receive benefits under the plan. The other 38% of the Combined Pension Plan's beginning net actuarial loss balance was treated as indefinitely deferred during 2022. Additionally, upon the sale of the ILEC business on October 3, 2022, we recognized \$564 million of net actuarial loss, pre-tax, related to the Lumen Pension Plan, offsetting our gain on the sale of the business. The entire beginning net actuarial loss of \$217 million for the post-retirement benefit plans was treated as indefinitely deferred during 2022.

As of January 1, 2021, our qualified pension plan had a net actuarial loss balance of approximately \$3.0 billion. A portion of this balance was subject to amortization as a component of net periodic expense over the average remaining service period for participating employees expected to receive benefits under the plan. During 2021, our lump sum pension settlement payments exceeded the settlement threshold and as a result we recognized a non-cash settlement charge of \$383 million, accelerating previously unrecognized actuarial losses from our net actuarial loss balance. For our post-retirement benefit plans, the majority of the beginning net actuarial loss balance of \$346 million continued to be deferred during 2021.

In 2020, approximately 59% of the qualified pension plan's January 1, 2020 net actuarial loss balance of \$3.0 billion was subject to amortization as a component of net periodic expense over the average remaining service period of 9 years for participating employees expected to receive benefits under the plan. The other 41% of the qualified pension plan's beginning net actuarial loss balance was treated as indefinitely deferred during 2020. The entire beginning net actuarial loss of \$175 million for the post-retirement benefit plans was treated as indefinitely deferred during 2020.

In computing our pension and post-retirement health care and life insurance benefit obligations, our most significant assumptions are the discount rate and mortality rates. In computing our periodic pension expense, our most significant assumptions are the discount rate and the expected rate of return on plan assets. In computing our post-retirement benefit expense, our most significant assumption is the discount rate.

The discount rate for each plan is the rate at which we believe we could effectively settle the plan's benefit obligations as of the end of the year. We selected each plan's discount rate based on a cash flow matching analysis using hypothetical yield curves from high-quality U.S. corporate bonds and projections of the future benefit payments that constitute the projected benefit obligation for the plans. This process establishes the uniform discount rate that produces the same present value of the estimated future benefit payments as is generated by discounting each year's benefit payments by a spot rate applicable to that year. The spot rates used in this process were derived from a yield curve created from yields on the 60th to 90th percentile of U.S. high quality bonds.

The impacts of a hypothetical change in the discount rate on the benefit obligation for the qualified pension plan and the post-retirement benefit plans obligation are detailed in the table below.

	Percentage point change	Increase/(decrease) at December 31, 2022 (Dollars in millions)
Combined Pension Plan discount rate	1 % \$	(377)
	(1)%	458
Post-retirement benefit plans discount rate	1 %	(163)
	(1)%	163

Published mortality rates help predict the expected life of plan participants and are based on historical demographic studies by the Society of Actuaries ("SOA"). The SOA publishes new mortality rates (mortality tables and projection scales) on a regular basis which reflect updates to projected life expectancies in North America. Historically, we have adopted the new projection tables immediately after publication. The SOA did not release any revised mortality tables or projection scales in 2022.

The expected rate of return on plan assets is the long-term rate of return we expect to earn on the plans' assets in the future, net of administrative expenses paid from plan assets. The rate of return is determined by the strategic allocation of plan assets and the long-term risk and return forecast for each asset class. The forecasts for each asset class are generated primarily from an analysis of the long-term expectations of various third-party investment management organizations, to which we then add a factor of 50 basis points to reflect the benefit we expect to result from our active management of the assets. The expected rate of return on plan assets is reviewed annually and revised, as necessary, to reflect changes in the financial markets and our investment strategy.

Changes in any of the above factors could significantly impact operating expenses in our consolidated statements of operations and other comprehensive loss in our consolidated statements of comprehensive income (loss), as well as the value of the liability and accumulated other comprehensive loss of stockholders' equity on our consolidated balance sheets.

Loss Contingencies and Litigation Reserves

We are involved in several potentially material legal proceedings, as described in more detail in Note 18—Commitments, Contingencies and Other Items. On a quarterly basis, we assess potential losses in relation to these and other pending or threatened tax and legal matters. For matters not related to income taxes, if a loss is considered probable and the amount can be reasonably estimated, we recognize an expense for the estimated loss. To the extent these estimates are more or less than the actual liability resulting from the resolution of these matters, our earnings will be increased or decreased accordingly. If the differences are material, our consolidated financial statements could be materially impacted.

For matters related to income taxes, if we determine in our judgment that the impact of an uncertain tax position is more likely than not to be sustained upon audit by the relevant taxing authority, then we recognize in our financial statements a benefit for the largest amount that is more likely than not to be sustained. No portion of an uncertain tax position will be recognized if we determine in our judgment that the position has less than a 50% likelihood of being sustained. Though the validity of any tax position is a matter of tax law, the body of statutory, regulatory and interpretive guidance on the application of the law is complex and often ambiguous, particularly in certain of the non-U.S. jurisdictions in which we operate. Because of this, whether a tax position will ultimately be sustained may be uncertain.

Income Taxes

Our provision for income taxes includes amounts for tax consequences deferred to future periods. We record deferred income tax assets and liabilities reflecting future tax consequences attributable to (i) tax credit carryforwards, (ii) differences between the financial statement carrying value of assets and liabilities and the tax basis of those assets and liabilities and (iii) tax NOLs. Deferred taxes are computed using enacted tax rates expected to apply in the year in which the differences are expected to affect taxable income. The effect of a change in tax rate on deferred income tax assets and liabilities is recognized in earnings in the period that includes the enactment date.

The measurement of deferred taxes often involves the exercise of considerable judgment related to the realization of tax basis. Our deferred tax assets and liabilities reflect our assessment that tax positions taken in filed tax returns and the resulting tax basis are more likely than not to be sustained if they are audited by taxing authorities. Assessing tax rates that we expect to apply and determining the years when the temporary differences are expected to affect taxable income requires judgment about the future apportionment of our income among the states in which we operate. Any changes in our practices or judgments involved in the measurement of deferred tax assets and liabilities could materially impact our financial condition or results of operations.

In connection with recording deferred income tax assets and liabilities, we establish valuation allowances when necessary to reduce deferred income tax assets to amounts that we believe are more likely than not to be realized. We evaluate our deferred tax assets quarterly to determine whether adjustments to our valuation allowances are appropriate in light of changes in facts or circumstances, such as changes in tax law, interactions with taxing authorities and developments in case law. In making this evaluation, we rely on our recent history of pre-tax earnings. We also rely on our forecasts of future earnings and the nature and timing of future deductions and benefits represented by the deferred tax assets, all of which involve the exercise of significant judgment. At December 31, 2022, we established a valuation allowance of \$550 million primarily related to state NOLs, based on our determination that it was more likely than not that this amount of these NOLs would expire unused. If forecasts of future earnings and the nature and estimated timing of future deductions and benefits change in the future, we may determine that existing valuation allowances must be revised or eliminated or new valuation allowances created, any of which could materially impact our financial condition or results of operations. See Note 16—Income Taxes to our consolidated financial statements in Item 8 of Part II of this report.

Liquidity and Capital Resources

Overview of Sources and Uses of Cash

We are a holding company that is dependent on the capital resources of our subsidiaries to satisfy our parent company liquidity requirements. Several of our significant operating subsidiaries have borrowed funds either on a standalone basis or as part of a separate restricted group with certain of its subsidiaries or affiliates. The terms of the instruments governing the indebtedness of these borrowers or borrowing groups may restrict our ability to access their accumulated cash. In addition, our ability to access the liquidity of these and other subsidiaries may be limited by tax, legal and other considerations.

At December 31, 2022, we held cash and cash equivalents of \$1.3 billion, a small portion of which is classified as held for sale, and we also had \$2.2 billion of borrowing capacity available under our revolving credit facility. We typically use our revolving credit facility as a source of liquidity for operating activities and our other cash requirements. We had approximately \$97 million of cash and cash equivalents outside the United States at December 31, 2022. We currently believe that there are no material restrictions on our ability to repatriate cash and cash equivalents into the United States, and that we may do so without paying or accruing U.S. taxes. Other than transactions related to our EMEA divestiture, we do not currently intend to repatriate to the United States any of our foreign cash and cash equivalents from operating entities.

In response to COVID-19, the U.S. Congress passed the CARES Act on March 27, 2020. Under the CARES Act, we deferred \$134 million of our 2020 payroll taxes, \$61 million of which were repaid in 2022 and \$67 million of which were repaid in 2021. We transferred \$6 million of this deferred payment obligation to the purchasers of our ILEC business on October 3, 2022.

Our executive officers and our Board of Directors review our sources and potential uses of cash in connection with our annual budgeting process and whenever circumstances warrant. Generally speaking, our principal funding source is cash from operating activities, and our principal cash requirements include operating expenses, capital expenditures, income taxes, debt repayments, periodic securities repurchases, periodic pension contributions and other benefits payments. The impact of the sale of our Latin American and ILEC businesses and pending sale of the EMEA business is further described below.

Based on our current capital allocation objectives, during 2023 we project expending approximately \$2.9 billion to \$3.1 billion of capital expenditures.

For the 12 month period ending December 31, 2023, we project that our fixed commitments will include (i) \$125 million of scheduled term loan amortization payments and (ii) \$32 million of finance lease and other fixed payments (which includes \$3 million of finance lease obligations that have been classified as held for sale).

We will continue to monitor our future sources and uses of cash, and anticipate that we will make adjustments to our capital allocation strategies when, as and if determined by our Board of Directors. We may also draw on our revolving credit facility as a source of liquidity for operating activities and to give us additional flexibility to finance our capital investments, repayments of debt, pension contributions and other cash requirements.

For additional information, see "Risk Factors—Financial Risks" in Item 1A of Part I of this report.

Impact of the Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business

As discussed in Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business to our consolidated financial statements in Item 8 of Part II of this report, we sold our Latin American and ILEC Businesses on August 1, 2022 and October 3, 2022, respectively. Additionally, we have agreed to divest our EMEA business subject to the receipt of various approvals and the satisfaction of other customary conditions. As further described elsewhere herein, these transactions have provided or are expected to provide us with a substantial amount of cash proceeds, but ultimately will reduce our base of income-generating assets that generate our recurring cash from operating activities. As a result of these divestitures, we have utilized all of our NOLs available for use in 2022. The estimated amount of cash taxes related to our 2022 divestitures is \$900 million to \$1 billion. See "—Net Operating Loss Carryforwards" below.

Capital Expenditures

We incur capital expenditures on an ongoing basis to expand and improve our service offerings, enhance and modernize our networks and compete effectively in our markets. We evaluate capital expenditure projects based on a variety of factors, including expected strategic impacts (such as forecasted impact on revenue growth, productivity, expenses, service levels and customer retention) and our expected return on investment. The amount of capital investment is influenced by, among other things, current and projected demand for our services and products, cash flow generated by operating activities, cash required for other purposes, regulatory considerations (such as governmentally-mandated infrastructure buildout requirements) and the availability of requisite supplies, labor and permits.

Our capital expenditures continue to be focused on enhancing network operating efficiencies, supporting new service developments, and expanding our fiber network, including our Quantum Fiber buildout plan. A portion of our 2023 capital expenditures will also be focused on restoring network assets destroyed or damaged by Hurricane Ian in Florida during 2022. For more information on our capital spending, see (i) "—Overview of Sources and Uses of Cash" above, (ii) "Cash Flow Activities—Investing Activities" below and (iii) Item 1 of Part 1 of this report.

Debt Instruments and Financing Arrangements

Debt Instruments

At December 31, 2022, we had \$10.4 billion of outstanding consolidated secured indebtedness, \$10.1 billion of outstanding consolidated unsecured indebtedness (excluding (i) finance lease obligations, (ii) unamortized premiums, net and (iii) unamortized debt issuance costs) and \$2.2 billion of unused borrowing capacity under our revolving credit facility, as discussed further below.

Under our amended and restated credit agreement dated as of January 31, 2020 (the "Amended Credit Agreement"), we maintained at December 31, 2022 (i) a \$2.2 billion senior secured revolving credit facility, under which we owed nothing as of such date, and (ii) \$5.2 billion of senior secured term loan facilities. For additional information, see (i) "—Overview of Sources and Uses of Cash," and (ii) Note 7—Long-Term Debt and Credit Facilities to our consolidated financial statements in Item 8 of Part II of this report.

At December 31, 2022, we had \$33 million of letters of credit outstanding under our \$225 million uncommitted letter of credit facility. Additionally, under separate facilities, we had outstanding letters of credit, or other similar obligations, of approximately \$61 million as of December 31, 2022, of which \$3 million is collateralized by cash that is reflected on our consolidated balance sheets as restricted cash within other assets.

In addition to its indebtedness under our Amended Credit Agreement, Lumen Technologies is indebted under its outstanding senior notes, and several of its subsidiaries are indebted under separate credit facilities or senior notes. For information on the terms and conditions of other debt instruments of ours and our subsidiaries, including financial and operating covenants, see (i) Note 7—Long-Term Debt and Credit Facilities to our consolidated financial statements in Item 8 of Part II of this report and (ii) "—Other Matters" below.

Future Financings and Debt Reduction Transactions

Subject to market conditions, we expect to continue to issue debt securities from time to time in the future to refinance a substantial portion of our maturing debt, including issuing debt securities of certain of our subsidiaries to refinance their maturing debt to the extent permitted under our debt covenants and consistent with our capital allocation strategies. The availability, interest rate and other terms of any new borrowings will depend on the ratings assigned by credit rating agencies, among other factors.

As of the filing date of this report, the credit ratings for the senior secured and unsecured debt of Lumen Technologies, Inc., Level 3 Financing, Inc. and Qwest Corporation were as follows:

Borrower	Moody's Investors Service, Inc.	Standard & Poor's	Fitch Ratings
Lumen Technologies, Inc.:			
Unsecured	B2	B	BB
Secured	Ba3	BB	BB+
Level 3 Financing, Inc.:			
Unsecured	Ba3	B+	BB
Secured	Ba1	BB	BBB-
Qwest Corporation:			
Unsecured	Ba2	BB	BB

Our credit ratings are reviewed and adjusted from time to time by the rating agencies. Any future changes in the senior unsecured or secured debt ratings of us or our subsidiaries could impact our access to capital or borrowing costs. With the recent downgrade of certain of our credit ratings we may find it more difficult to borrow on favorable terms, or at all. See "Risk Factors—Financial Risks" in Item 1A of Part I of this report.

From time to time over the past couple of years, we have engaged in various refinancings, redemptions, tender offers, open market purchases and other transactions designed to reduce our consolidated indebtedness, lower our interest costs, improve our financial flexibility or otherwise enhance our debt profile. We plan to continue to pursue similar transactions in the future. Whether and when we implement any additional such transactions depends on a wide variety of factors, including without limitation market conditions, our upcoming debt maturities, and our cash requirements. There is no guarantee that we will be successful in implementing any such transactions or attaining our stated objectives. We may not disclose these transactions in advance, unless required by applicable law or material in nature or amount. See Note 7—Long-Term Debt and Credit Facilities to our consolidated financial statements in Item 8 of Part II of this report for additional information.

Net Operating Loss Carryforwards

As of December 31, 2022, Lumen Technologies had approximately \$1.0 billion of federal net operating loss carryforwards ("NOLs"), which for U.S. federal income tax purposes can be used to offset future taxable income. These NOLs are primarily related to federal NOLs we acquired through the Level 3 acquisition on November 1, 2017 and are subject to limitations under Section 382. We maintain a Section 382 rights agreement designed to safeguard through late 2023 our ability to use those NOLs. We have utilized a substantial portion of our available NOLs to offset taxable gains generated by the completion of our 2022 divestitures. As a result, we anticipate that our cash income tax liabilities will increase substantially in future periods. The amounts of our near-term future tax payments will depend upon many factors, including our future earnings and tax circumstances and the impact of any corporate tax reform or taxable transactions. Based on current laws and our current assumptions and projections, we estimate our cash federal income tax liability related to the 2023 tax year will range from \$200 million to \$300 million.

Although we expect to use substantially all of our remaining NOLs in future periods in accordance with Section 382's annual limitations, we cannot assure this. See "Risk Factors—Financial Risks—We may not be able to fully utilize our NOLs" in Item 1A of Part I of this report.

Dividends

Between the first quarter of 2019 and the third quarter of 2022, our Board of Directors declared quarterly cash dividends of \$0.25 per share of our outstanding common stock. On November 2, 2022, we announced that our Board had terminated our quarterly cash dividend program. Under this revised capital allocation policy, the company plans to continue to invest in growth initiatives.

Stock Repurchases

Effective November 2, 2022, our Board of Directors authorized a new two-year program to repurchase up to an aggregate of \$1.5 billion of our outstanding common stock (the "November 2022 stock repurchase program"). During the year ended December 31, 2022, we repurchased 33 million shares of our outstanding common stock in the open market for an aggregate market price of \$200 million, or an average purchase price of \$6.07 per share. All repurchased common stock has been retired. We expect repurchases made in 2023 and beyond to be subject to a non-deductible 1% excise tax on the fair market value of the stock under the Inflation Reduction Act of 2022.

Pension and Post-retirement Benefit Obligations

We are subject to material obligations under our existing defined benefit pension plans and post-retirement benefit plans. At December 31, 2022, the accounting unfunded status of our qualified and non-qualified defined benefit pension plans and our qualified post-retirement benefit plans was \$615 million and \$2.0 billion, respectively. For additional information about our pension and post-retirement benefit arrangements, see "Critical Accounting Policies and Estimates—Pension and Post-retirement Benefits" in Item 7 of Part II of this report and Note 11—Employee Benefits to our consolidated financial statements in Item 8 of Part II of this report.

On October 19, 2021, we, as sponsor of the Lumen Combined Pension Plan ("Combined Pension Plan"), along with the Plan's independent fiduciary, entered into an agreement committing the Plan to use a portion of its plan assets to purchase an annuity from an insurance company (the "Insurer") to transfer \$1.4 billion of the Plan's pension liabilities. This agreement irrevocably transferred to the Insurer future Plan benefit obligations for approximately 22,600 U.S. Lumen participants ("Transferred Participants") effective on December 31, 2021. This annuity transaction was funded entirely by existing Plan assets and is intended to provide equivalent benefits to the Transferred Participants. The Insurer is committed to assume responsibility for administrative and customer service support, including distribution of payments to the Transferred Participants.

As of January 1, 2022, we spun off the Lumen Pension Plan from the Combined Pension Plan in anticipation of the sale of the ILEC business, as described further in Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business to our consolidated financial statements in Item 1 of Part I of this report. At the time of the spin-off we transferred \$2.5 billion of pension benefit obligation and \$2.2 billion of plan assets to the Lumen Pension Plan. Following a revaluation of the pension obligation and pension assets for the Lumen Pension Plan in preparation for the closing of the ILEC business divestiture, we contributed approximately \$319 million of cash in September 2022 to satisfy our contractual obligations to the purchaser of the divested business. This plan was subsequently assumed by the purchaser as part of our divestiture of our ILEC business on October 3, 2022. Upon sale of the ILEC business, we recognized \$403 million of net actuarial loss and prior service cost, net of tax impact, related to the Lumen Pension Plan, which offset our gain on sale of the business.

Benefits paid by our Combined Pension Plan are paid through the trust that holds the Combined Pension Plan's assets. Based on current laws and circumstances, we do not expect any contributions to be required for our Combined Pension Plan during 2023. The amount of required contributions to our Combined Pension Plan in 2024 and beyond will depend on a variety of factors, most of which are beyond our control, including earnings on plan investments, prevailing interest rates, demographic experience, changes in plan benefits and changes in funding laws and regulations. We occasionally make voluntary contributions to our plans in addition to required contributions and reserve the right to do so in the future. We last made a voluntary contribution to the trust for our Combined Pension Plan during 2018. We currently do not expect to make a voluntary contribution in 2023.

Substantially all of our post-retirement health care and life insurance benefits plans are unfunded and are paid by us with available cash. As described further in Note 11—Employee Benefits, aggregate benefits paid by us under these plans (net of participant contributions and direct subsidy receipts) were \$210 million, \$203 million and \$211 million for the years ended December 31, 2022, 2021 and 2020, respectively. For additional information on our expected future benefits payments for our post-retirement benefit plans, see Note 11—Employee Benefits to our consolidated financial statements in Item 8 of Part II of this report.

For 2022, our expected annual long-term rate of return on the pension plan assets, net of administrative expenses, was 5.5%. For 2023, our expected annual long-term rate of return on these assets is 6.5%. However, actual returns could be substantially different.

Our pension plan contains provisions that allow us, from time to time, to offer lump sum payment options to certain former employees in settlement of their future retirement benefits. We record an accounting settlement charge, consisting of the recognition of certain deferred costs of the pension plan, associated with these lump sum payments only if, in the aggregate, they exceed the sum of the annual service and interest costs for the plan's net periodic pension benefit cost, which represents the settlement accounting threshold. As of December 31, 2021, lump sum pension settlement payments exceeded the settlement threshold. As a result, for the year ended December 31, 2021 we recognized a non-cash settlement charge of \$383 million to accelerate the recognition of a portion of the previously unrecognized actuarial losses in the qualified pension plan, which was allocated and reflected in other income (expense), net in our consolidated statement of operations for the year ended December 31, 2021. The settlement threshold was not exceeded for the year ended December 31, 2022. The amount of any future non-cash settlement charges will be dependent on several factors, including the total amount of our future lump sum benefit payments.

Future Contractual Obligations

Our estimated future obligations as of December 31, 2022 include both current and long term obligations. These amounts include liabilities that have been classified as liabilities held for sale on our consolidated balance sheet. We have a current obligation of \$157 million and a long-term obligation of \$20.6 billion of long-term debt (excluding unamortized premiums, net and unamortized debt issuance costs, inclusive of obligations that have been classified as held for sale). Under our operating leases, we have a current obligation of \$449 million and a long-term obligation of \$1.5 billion (inclusive of operating lease obligations classified as held for sale). We have current obligations related to right-of-way agreements and purchase commitments of \$829 million and a long-term obligation of \$1.7 billion. Additionally, we have a current obligation for asset retirement obligation of \$30 million and a long-term obligation of \$156 million. Finally, our pension and post-retirement benefit plans have an unfunded benefit obligation, of which \$215 million is classified as current and \$2.4 billion is classified as long-term. For additional information, see Note 7—Long-Term Debt and Credit Facilities, Note 5—Leases, Note 18—Commitments, Contingencies and Other Items, Note 9—Property, Plant and Equipment and Note 11—Employee Benefits, respectively.

Federal Broadband Support Programs

Between 2015 and 2021, we received approximately \$500 million annually through the CAF II program, a program that ended on December 31, 2021. In connection with the CAF II funding, we were required to meet certain specified infrastructure buildout requirements in 33 states by the end of 2021, which required substantial capital expenditures. In the first quarter of 2022, we recognized \$59 million of previously deferred revenue related to the conclusion of the CAF II program based upon our final buildout and filing submissions. The government has the right to audit our compliance with the CAF II program. The ultimate outcome of any remaining examinations is unknown, but could result in a liability to us in excess of our reserve accruals established for these matters.

In early 2020, the FCC created the Rural Digital Opportunity Fund (the "RDOF"), which is a federal support program designed to replace the CAF II program. On December 7, 2020, the FCC allocated in its RDOF Phase I auction \$9.2 billion in support payments over 10 years to deploy high speed broadband to over 5.2 million unserved locations. We won bids to receive approximately \$26 million of annual RDOF Phase I support payments approximately 36% of which is attributable to the ILEC business we divested on October 3, 2022. Our support payments under the RDOF Phase I program commenced during the second quarter of 2022.

For additional information on these programs, see (i) Note 4—Revenue Recognition to our consolidated financial statements in Item 8 of Part II of this report, (ii) "Business—Regulation of Our Business" in Item 1 of Part I of this report and (iii) "Risk Factors—Legal and Regulatory Risks" in Item 1A of Part I of this report.

Federal officials have proposed changes to current programs and laws that could impact us, including proposals designed to increase broadband access, increase competition among broadband providers, lower broadband costs and re-adopt "net neutrality" rules similar to those adopted under the Obama Administration. In November 2021, the U.S. Congress enacted legislation that appropriated \$65 billion to improve broadband affordability and access, primarily through federally funded state grants. As of the date of this report, various state and federal agencies are continuing to take steps to make this funding available to eligible applicants, including us. It remains premature to speculate on the ultimate impact of this legislation on us.

Cash Flow Activities

The following table summarizes our consolidated cash flow activities for the year ended December 31, 2022 and 2021. For information regarding cash flow activities for the year ended December 31, 2020, see "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of Part II of our Annual Report Form 10-K for the year ended December 31, 2021.

	Years Ended December 31,		(Decrease) / Increase
	2022	2021	
	(Dollars in millions)		
Net cash provided by operating activities	\$ 4,735	6,501	(1,766)
Net cash provided by (used in) investing activities	5,476	(2,712)	8,188
Net cash used in financing activities	(9,313)	(3,807)	5,506

Operating Activities

Net cash provided by operating activities decreased by \$1.8 billion for the year ended December 31, 2022 as compared to the year ended December 31, 2021 primarily due to lower net income adjusted for non-cash expenses and gains, as well as our pension contribution made in preparation for the closing of the ILEC business divestiture. Cash provided by operating activities is subject to variability period over period as a result of timing differences, including with respect to the collection of receivables and payments of interest expense, accounts payable, income taxes and bonuses.

For additional information about our operating results, see "Results of Operations" above.

Investing Activities

Net cash provided by (used in) investing activities increased by \$8.2 billion for the year ended December 31, 2022 as compared to the year ended December 31, 2021 primarily due to pre-tax cash proceeds from the sales of our Latin American and ILEC businesses, which was partially offset by an increase in capital expenditures.

Financing Activities

Net cash used in financing activities increased by \$5.5 billion for the year ended December 31, 2022 as compared to the year ended December 31, 2021 primarily due to substantially higher debt repayments and proceeds from the issuance of long-term debt in the prior year, partially offset by higher repurchases of common stock and payments of dividends in the prior year.

See Note 7—Long-Term Debt and Credit Facilities to our consolidated financial statements in Item 8 of Part II of this report for additional information on our outstanding debt securities.

Other Matters

We have cash management and loan arrangements with a majority of our income-generating subsidiaries, in which a substantial portion of the aggregate cash of those subsidiaries' is periodically advanced or loaned to us or our service company affiliate. Although we periodically repay these advances to fund the subsidiaries' cash requirements throughout the year, at any given point in time we may owe a substantial sum to our subsidiaries under these arrangements. In accordance with generally accepted accounting principles, these arrangements are reflected in the balance sheets of our subsidiaries, but are eliminated in consolidation and therefore not recognized on our consolidated balance sheets.

We are also involved in various legal proceedings that could substantially impact our financial position. See Note 18—Commitments, Contingencies and Other Items to our consolidated financial statements in Item 8 of Part II of this report for additional information.

Market Risk

As of December 31, 2022, we are exposed to market risk from changes in interest rates on our variable rate long-term debt obligations and fluctuations in certain foreign currencies.

Management periodically reviews our exposure to interest rate fluctuations and periodically implements strategies to manage the exposure. From time to time, we have used derivative instruments to swap our exposure to variable interest rates for fixed interest rates. We have established policies and procedures for risk assessment and the approval, reporting and monitoring of derivative instrument activities. As of December 31, 2022, we did not hold or issue derivative financial instruments for trading or speculative purposes.

As of December 31, 2022, we had approximately \$7.8 billion floating rate debt, none of which is currently hedged. A hypothetical increase of 100 basis points in LIBOR relating to our \$7.8 billion of unhedged floating rate debt would, among other things, decrease our annual pre-tax earnings by approximately \$78 million. Additionally, our credit agreements contain language about a possible change from LIBOR to an alternative index.

We conduct a portion of our business in currencies other than the U.S. dollar, the currency in which our consolidated financial statements are reported. Our European subsidiaries use, and prior to the August 1, 2022 divestiture of our Latin American business, certain of our former Latin American subsidiaries used the local currency as their functional currency, as the majority of their sales and purchases are or were transacted in their local currencies. Although we continue to evaluate strategies to mitigate risks related to the effect of fluctuations in currency exchange rates, we will likely recognize gains or losses from international transactions. Accordingly, changes in foreign currency rates relative to the U.S. dollar could positively or negatively impact our operating results.

Certain shortcomings are inherent in the method of analysis presented in the computation of exposures to market risks. Actual values may differ materially from those disclosed by us from time to time if market conditions vary from the assumptions used in the analyses performed. These analyses only incorporate the risk exposures that existed at December 31, 2022.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The information in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Market Risk" in Item 7 of Part II of this report is incorporated herein by reference.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors
Lumen Technologies, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Lumen Technologies, Inc. and subsidiaries (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive (loss) income, cash flows, and stockholders' equity for each of the years in the three-year period ended December 31, 2022, and the related notes (collectively, 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, 2022 and 2021, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 23, 2023 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the 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 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.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Testing of revenue

As discussed in Note 4 to the consolidated financial statements, the Company recorded \$17.5 billion of operating revenues for the year ended December 31, 2022. The processing and recording of revenue are reliant upon multiple information technology (IT) systems.

We identified the evaluation of the sufficiency of audit evidence over revenue as a critical audit matter. Complex auditor judgment was required in evaluating the sufficiency of audit evidence over revenue due to the large volume of data and the number and complexity of the revenue accounting systems. Specialized skills and knowledge were needed to test the IT systems used for the processing and recording of revenue.

The following are the primary procedures we performed to address this critical audit matter. We applied auditor judgment to determine the nature and extent of procedures to be performed over the processing and recording of revenue, including the IT systems tested. We evaluated the design and tested the operating effectiveness of certain internal controls related to the processing and recording of revenue. This included manual and automated controls over the IT systems used for the processing and recording of revenue. For a selection of transactions, we compared the amount of revenue recorded to a combination of Company internal data, executed contracts, and other relevant third-party data. In addition, we involved IT professionals with specialized skills and knowledge who assisted in the design and performance of audit procedures related to certain IT systems used by the Company for the processing and recording of revenue. We evaluated the sufficiency of audit evidence obtained by assessing the results of procedures performed, including the relevance and reliability of evidence obtained.

Goodwill impairment of North America Business reporting unit

As discussed in Note 3 to the consolidated financial statements, the goodwill balance at December 31, 2022 was \$12.7 billion. The Company assesses goodwill for impairment at least annually, or more frequently, if events or circumstances indicate the carrying value of a reporting unit likely exceeds its fair value. On the annual goodwill impairment assessment date, the Company estimated the fair value of its reporting units by considering both a discounted cash flow method and a market approach. The annual impairment test determined the carrying value of the North America Business reporting unit exceeded its estimated fair value. As a result, the Company recorded a non-cash impairment charge of \$3.2 billion to reduce the carrying value of goodwill for the North America Business reporting unit.

We identified the assessment of the Company's annual impairment testing related to the carrying value of goodwill of the North America Business reporting unit as a critical audit matter. Subjective auditor judgment was required in evaluating certain assumptions used to estimate the fair value of the reporting unit. Those assumptions included: projected cash flows, the discount rate, and the earnings before interest, taxes, depreciation, and amortization ("EBITDA") market multiple. The evaluation of these assumptions was challenging due to their subjective nature. Additionally, differences in judgment used to determine these assumptions could have had a significant effect on the reporting unit's estimated fair value. Specialized skills and knowledge were required in the assessment of the discount rate and the EBITDA market multiple.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the annual impairment testing of goodwill. This included controls related to the Company's development of projected cash flows, and the determination of the discount rate and the EBITDA market multiple. We performed a sensitivity analysis over the projected cash flow assumptions to assess the impact on the Company's estimate of the fair value of the North America Business reporting unit. We assessed the Company's ability to accurately project cash flows by comparing the Company's historical projected cash flows to actual results. We also evaluated the Company's North America Business reporting unit's projected cash flows by comparing them to the Company's underlying business strategies, historic trends, and publicly available industry and analyst reports. We involved valuation professionals with specialized skills and knowledge, who assisted in:

- evaluating the discount rate by independently developing a discount rate range using publicly available market data for comparable entities
- evaluating the EBITDA market multiple by comparing to EBITDA market multiple range developed using publicly available market data for comparable entities
- performing sensitivity analyses that considered a range of discount rates and a range of EBITDA market multiples.

/s/ KPMG LLP

We have served as the Company's auditor since 1977.

Denver, Colorado

February 23, 2023

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors Lumen Technologies, Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited Lumen Technologies, Inc. and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive (loss) income, cash flows, and stockholders' equity for each of the years in the three-year period ended December 31, 2022, and the related notes (collectively, the consolidated financial statements), and our report dated February 23, 2023 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

Denver, Colorado
February 23, 2023

LUMEN TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions, except per share amounts, and shares in thousands)		
OPERATING REVENUE	\$ 17,478	19,687	20,712
OPERATING EXPENSES			
Cost of services and products (exclusive of depreciation and amortization)	7,868	8,488	8,934
Selling, general and administrative	3,078	2,895	3,464
Gain on sale of businesses	(773)	—	—
Loss on disposal groups held for sale	700	—	—
Depreciation and amortization	3,239	4,019	4,710
Goodwill impairment	3,271	—	2,642
Total operating expenses	<u>17,383</u>	<u>15,402</u>	<u>19,750</u>
OPERATING INCOME	95	4,285	962
OTHER EXPENSE			
Interest expense	(1,332)	(1,522)	(1,668)
Other income (expense), net	246	(62)	(76)
Total other expense, net	<u>(1,086)</u>	<u>(1,584)</u>	<u>(1,744)</u>
(LOSS) INCOME BEFORE INCOME TAXES	(991)	2,701	(782)
Income tax expense	557	668	450
NET (LOSS) INCOME	<u>\$ (1,548)</u>	<u>2,033</u>	<u>(1,232)</u>
BASIC AND DILUTED EARNINGS (LOSS) PER COMMON SHARE			
BASIC	\$ (1.54)	1.92	(1.14)
DILUTED	\$ (1.54)	1.91	(1.14)
WEIGHTED AVERAGE COMMON SHARES OUTSTANDING			
BASIC	1,007,517	1,059,541	1,079,130
DILUTED	1,007,517	1,066,778	1,079,130

See accompanying notes to consolidated financial statements.

LUMEN TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME

	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
NET (LOSS) INCOME	\$ (1,548)	2,033	(1,232)
OTHER COMPREHENSIVE INCOME (LOSS):			
Items related to employee benefit plans:			
Change in net actuarial loss, net of \$(205), \$(134) and \$26 tax	631	424	(92)
Reclassification of net actuarial loss to gain on the sale of business, net of \$(142), \$— and \$— tax	422	—	—
Settlement charges recognized in net income (loss), net of \$—, \$(93) and \$— tax	—	290	—
Change in net prior service cost, net of \$(9), \$(5) and \$(12) tax	30	14	33
Reclassification of prior service credit to gain on the sale of business, net of \$6, \$— and \$— tax	(19)	—	—
Curtailement loss, net of \$—, \$— and \$(1) tax	—	—	3
Reclassification of realized loss on interest rate swaps to net (loss) income, net of \$(5), \$(20) and \$(16) tax	17	63	46
Unrealized holding loss on interest rate swaps, net of \$—, \$— and \$29 tax	—	(1)	(86)
Reclassification of realized loss on foreign currency translation to gain on the sale of business, net of \$—, \$— and \$— tax	112	—	—
Foreign currency translation adjustment, net of \$58, \$30 and \$(43) tax	(134)	(135)	(37)
Other comprehensive income (loss)	1,059	655	(133)
COMPREHENSIVE (LOSS) INCOME	\$ (489)	2,688	(1,365)

See accompanying notes to consolidated financial statements.

LUMEN TECHNOLOGIES, INC.
CONSOLIDATED BALANCE SHEETS

	As of December 31,	
	2022	2021
	(Dollars in millions and shares in thousands)	
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	\$ 1,251	354
Accounts receivable, less allowance of \$85 and \$114	1,477	1,544
Assets held for sale	1,889	8,809
Other	803	829
Total current assets	5,420	11,536
Property, plant and equipment, net of accumulated depreciation of \$19,886 and \$19,271	19,166	20,895
GOODWILL AND OTHER ASSETS		
Goodwill	12,657	15,986
Other intangible assets, net	6,166	6,970
Other, net	2,172	2,606
Total goodwill and other assets	20,995	25,562
TOTAL ASSETS	\$ 45,581	57,993
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES		
Current maturities of long-term debt	\$ 154	1,554
Accounts payable	950	758
Accrued expenses and other liabilities		
Salaries and benefits	692	860
Income and other taxes	1,158	228
Current operating lease liabilities	344	385
Interest	181	278
Other	277	232
Liabilities held for sale	451	2,257
Current portion of deferred revenue	596	617
Total current liabilities	4,803	7,169
LONG-TERM DEBT	20,418	27,428
DEFERRED CREDITS AND OTHER LIABILITIES		
Deferred income taxes, net	3,163	4,049
Benefit plan obligations, net	2,391	3,710
Other	4,369	3,797
Total deferred credits and other liabilities	9,923	11,556
COMMITMENTS AND CONTINGENCIES (Note 18)		
STOCKHOLDERS' EQUITY		
Preferred stock — non-redeemable, \$25.00 par value, authorized 2,000 and 2,000 shares, issued and outstanding 7 and 7 shares	—	—
Common stock, \$1.00 par value, authorized 2,200,000 and 2,200,000 shares, issued and outstanding 1,001,688 and 1,023,512 shares	1,002	1,024
Additional paid-in capital	18,080	18,972
Accumulated other comprehensive loss	(1,099)	(2,158)
Accumulated deficit	(7,546)	(5,998)
Total stockholders' equity	10,437	11,840
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$ 45,581	57,993

See accompanying notes to consolidated financial statements.

LUMEN TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
OPERATING ACTIVITIES			
Net (loss) income	\$ (1,548)	2,033	(1,232)
Adjustments to reconcile net (loss) income to net cash provided by operating activities:			
Depreciation and amortization	3,239	4,019	4,710
Gain on sale of businesses	(773)	—	—
Loss on disposal groups held for sale	700	—	—
Goodwill impairment	3,271	—	2,642
Deferred income taxes	(1,230)	598	366
Provision for uncollectible accounts	133	105	189
Net (gain) loss on early retirement and modification of debt	(214)	(8)	105
Unrealized loss (gain) on investments	191	(138)	—
Stock-based compensation	98	120	175
Changes in current assets and liabilities:			
Accounts receivable	(158)	(8)	115
Accounts payable	98	(261)	(543)
Accrued income and other taxes	972	(69)	27
Other current assets and liabilities, net	(372)	(353)	(262)
Retirement benefits	46	163	(111)
Changes in other noncurrent assets and liabilities, net	258	283	246
Other, net	24	17	97
Net cash provided by operating activities	<u>4,735</u>	<u>6,501</u>	<u>6,524</u>
INVESTING ACTIVITIES			
Capital expenditures	(3,016)	(2,900)	(3,729)
Proceeds from sale of businesses	8,369	—	—
Proceeds from sale of property, plant and equipment and other assets	120	135	153
Other, net	3	53	12
Net cash provided by (used in) investing activities	<u>5,476</u>	<u>(2,712)</u>	<u>(3,564)</u>
FINANCING ACTIVITIES			
Net proceeds from issuance of long-term debt	—	1,881	4,361
Payments of long-term debt	(8,093)	(3,598)	(7,315)
Net (payments of) proceeds from revolving line of credit	(200)	50	(100)
Dividends paid	(780)	(1,087)	(1,109)
Repurchases of common stock	(200)	(1,000)	—
Other, net	(40)	(53)	(87)
Net cash used in financing activities	<u>(9,313)</u>	<u>(3,807)</u>	<u>(4,250)</u>

Net increase (decrease) in cash, cash equivalents and restricted cash	898	(18)	(1,290)
Cash, cash equivalents and restricted cash at beginning of period	409	427	1,717
Cash, cash equivalents and restricted cash at end of period	\$ 1,307	409	427
Supplemental cash flow information:			
Income taxes (paid) refunded, net	\$ (76)	(112)	28
Interest paid (net of capitalized interest of \$66, \$53 and \$75)	\$ (1,365)	(1,487)	(1,627)
Supplemental non-cash information regarding investing activities:			
Sale of property, plant and equipment in exchange for note receivable	—	56	—
Supplemental non-cash information regarding financing activities:			
Purchase of software subscription in exchange for installment debt	—	77	—
Cash, cash equivalents and restricted cash:			
Cash and cash equivalents	\$ 1,251	354	406
Cash and cash equivalents and restricted cash included in Assets held for sale	44	40	—
Restricted cash included in Other current assets	—	2	3
Restricted cash included in Other, net noncurrent assets	12	13	18
Total	\$ 1,307	409	427

See accompanying notes to consolidated financial statements.

LUMEN TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions except per share amounts)		
COMMON STOCK			
Balance at beginning of period	\$ 1,024	1,097	1,090
Issuance of common stock through dividend reinvestment, incentive and benefit plans	11	8	7
Repurchases of common stock	(33)	(81)	—
Balance at end of period	<u>1,002</u>	<u>1,024</u>	<u>1,097</u>
ADDITIONAL PAID-IN CAPITAL			
Balance at beginning of period	18,972	20,909	21,874
Repurchases of common stock	(167)	(919)	—
Shares withheld to satisfy tax withholdings	(30)	(45)	(40)
Stock-based compensation and other, net	96	122	187
Dividends declared	(791)	(1,095)	(1,112)
Balance at end of period	<u>18,080</u>	<u>18,972</u>	<u>20,909</u>
ACCUMULATED OTHER COMPREHENSIVE LOSS			
Balance at beginning of period	(2,158)	(2,813)	(2,680)
Other comprehensive income (loss)	1,059	655	(133)
Balance at end of period	<u>(1,099)</u>	<u>(2,158)</u>	<u>(2,813)</u>
ACCUMULATED DEFICIT			
Balance at beginning of period	(5,998)	(8,031)	(6,814)
Net (loss) income	(1,548)	2,033	(1,232)
Cumulative effect of adoption of ASU 2016-13, Measurement of Credit Losses, net of \$(2) tax	—	—	9
Other	—	—	6
Balance at end of period	<u>(7,546)</u>	<u>(5,998)</u>	<u>(8,031)</u>
TOTAL STOCKHOLDERS' EQUITY	<u>\$ 10,437</u>	<u>11,840</u>	<u>11,162</u>
DIVIDENDS DECLARED PER COMMON SHARE	<u>\$ 0.75</u>	<u>1.00</u>	<u>1.00</u>

See accompanying notes to consolidated financial statements.

LUMEN TECHNOLOGIES, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

References in the Notes to "Lumen Technologies" or "Lumen," "we," "us," the "Company," and "our" refer to Lumen Technologies, Inc. and its consolidated subsidiaries, unless the context otherwise requires. References in the Notes to "Level 3" refer to Level 3 Parent, LLC and its predecessor, Level 3 Communications, Inc., which we acquired on November 1, 2017.

(1) Background and Summary of Significant Accounting Policies

General

We are an international facilities-based technology and communications company engaged primarily in providing a broad array of integrated products and services to our business and mass markets customers. Our specific products and services are detailed in Note 4—Revenue Recognition.

Basis of Presentation

The accompanying consolidated financial statements include our accounts and the accounts of our subsidiaries in which we have a controlling interest. Intercompany amounts and transactions with our consolidated subsidiaries have been eliminated.

To simplify the overall presentation of our consolidated financial statements, we report immaterial amounts attributable to noncontrolling interests in certain of our subsidiaries as follows: (i) income attributable to noncontrolling interests in other income (expense), net, (ii) equity attributable to noncontrolling interests in additional paid-in capital and (iii) cash flows attributable to noncontrolling interests in other, net financing activities.

We reclassified certain prior period amounts to conform to the current period presentation, including the recategorization of our Mass Markets revenue by product category in our segment reporting for 2022, 2021 and 2020. See Note 17—Segment Information for additional information. These changes had no impact on total operating revenue, total operating expenses or net (loss) income for any period.

Operating Expenses

Our current definitions of operating expenses are as follows:

- *Cost of services and products (exclusive of depreciation and amortization)* are expenses incurred in providing products and services to our customers. These expenses include: employee-related expenses directly attributable to operating and maintaining our network (such as salaries, wages, benefits and professional fees); facilities expenses (which include third-party telecommunications expenses we incur for using other carriers' networks to provide services to our customers); rents and utilities expenses; equipment sales expenses (such as data integration and modem expenses); and other expenses directly related to our operations; and
- *Selling, general and administrative expenses* are corporate overhead and other operating expenses. These expenses include: employee-related expenses (such as salaries, wages, internal commissions, benefits and professional fees) directly attributable to selling products or services and employee-related expenses for administrative functions; marketing and advertising; property and other operating taxes and fees; external commissions; litigation expenses associated with general matters; bad debt expense; and other selling, general and administrative expenses.

These expense classifications may not be comparable to those of other companies.

Summary of Significant Accounting Policies

Use of Estimates

Our consolidated financial statements are prepared in accordance with U.S. generally accepted accounting principles. These accounting principles require us to make certain estimates, judgments and assumptions. We believe that the estimates, judgments and assumptions we make when accounting for specific items and matters are reasonable, based on information available at the time they are made. These estimates, judgments and assumptions can materially affect the reported amounts of assets, liabilities and components of stockholders' equity as of the dates of the consolidated balance sheets, as well as the reported amounts of revenue, expenses and components of cash flows during the periods presented in our other consolidated financial statements. We also make estimates in our assessments of potential losses in relation to threatened or pending tax and legal matters. See Note 16—Income Taxes and Note 18—Commitments, Contingencies and Other Items for additional information.

For matters not related to income taxes, if a loss contingency is considered probable and the amount can be reasonably estimated, we recognize an expense for the estimated loss. If we have the potential to recover a portion of the estimated loss from a third party, we make a separate assessment of recoverability and reduce the estimated loss if recovery is also deemed probable.

For matters related to income taxes, if we determine that the impact of an uncertain tax position is more likely than not to be sustained upon audit by the relevant taxing authority, then we recognize a benefit for the largest amount that is more likely than not to be sustained. No portion of an uncertain tax position will be recognized if the position has less than a 50% likelihood of being sustained. Interest is recognized on the amount of unrecognized benefit from uncertain tax positions.

For all of these and other matters, actual results could differ materially from our estimates.

Assets Held for Sale

We classify assets and related liabilities as held for sale when: (i) management has committed to a plan to sell the assets, (ii) the net assets are available for immediate sale, (iii) there is an active program to locate a buyer and (iv) the sale and transfer of the net assets is probable within one year. Assets and liabilities held for sale are presented separately on our consolidated balance sheets with a valuation allowance, if necessary, to recognize the net carrying amount at the lower of cost or fair value, less costs to sell. Depreciation of property, plant and equipment and amortization of finite-lived intangible assets and right-of-use assets are not recorded while these assets are classified as held for sale. For each period that assets are classified as being held for sale, they are tested for recoverability. Unless otherwise specified, the amounts and information presented in the notes do not include assets and liabilities that have been classified as held for sale as of December 31, 2022. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business for additional information.

Revenue Recognition

We earn most of our consolidated revenue from contracts with customers, primarily through the provision of communications and other services. Revenue from contracts with customers is accounted for under Accounting Standards Codification ("ASC") 606. We also earn revenue from leasing arrangements (primarily fiber capacity and colocation agreements) and governmental subsidy payments, which are not accounted for under ASC 606.

Revenue is recognized when control of the promised goods or services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to receive in exchange for those goods or services. Revenue is recognized based on the following five-step model:

- Identification of the contract with a customer;
- Identification of the performance obligations in the contract;
- Determination of the transaction price;

- Allocation of the transaction price to the performance obligations in the contract; and
- Recognition of revenue when, or as, we satisfy a performance obligation.

We provide an array of communications services to business and residential customers, including local voice, VPN, Ethernet, data, broadband, private line (including special access), network access, transport, voice, information technology, video and other ancillary services. We provide these services to a wide range of businesses, including global, enterprise, wholesale, government, and small and medium business customers. Certain contracts also include the sale of equipment, which is not significant to our business.

We recognize revenue for services when we provide the applicable service or when control of a product is transferred. Recognition of certain payments received in advance of services being provided is deferred. These advance payments may include certain activation and certain installation charges. If the activation and installation charges are not separate performance obligations, we recognize them as revenue over the actual or expected contract term using historical experience, which typically ranges from one to five years depending on the service. In most cases, termination fees or other fees on existing contracts that are negotiated in conjunction with new contracts are deferred and recognized over the new contract term.

For access services, we generally bill fixed monthly charges one month in advance to customers and recognize revenue as service is provided over the contract term in alignment with the customer's receipt of service. For usage and other ancillary services, we generally bill in arrears and recognize revenue as usage or delivery occurs. In most cases, the amount invoiced for our service offerings constitutes the price that would be billed on a standalone basis.

In certain cases, customers may be permitted to modify their contracts. We evaluate the change in scope or price to identify whether the modification should be treated as a separate contract, whether the modification is a termination of the existing contract and creation of a new contract, or if it is a change to the existing contract.

Customer contracts are evaluated to determine whether the performance obligations are separable. If the performance obligations are deemed separable and separate earnings processes exist, the total transaction price that we expect to receive with the customer is allocated to each performance obligation based on its relative standalone selling price. The revenue associated with each performance obligation is then recognized as earned.

We periodically sell transmission capacity on our network. These transactions are generally structured as indefeasible rights of use, commonly referred to as IRUs, which are the exclusive right to use a specified amount of capacity or fiber for a specified term, typically 20 years. In most cases, we account for the cash consideration received on transfers of transmission capacity as ASC 606 revenue which is adjusted for the time value of money and is recognized ratably over the term of the agreement. Cash consideration received on transfers of dark fiber is accounted for as non-ASC 606 lease revenue, which we also recognize ratably over the term of the agreement. We do not recognize revenue on any contemporaneous exchanges of our transmission capacity assets for other non-owned transmission capacity assets.

In connection with offering products and services provided to the end user by third-party vendors, we review the relationship between us, the vendor and the end user to assess whether revenue should be reported on a gross or net basis. In assessing whether revenue should be reported on a gross or net basis, we consider whether we act as a principal in the transaction and control the goods and services used to fulfill the performance obligations associated with the transaction.

We have service level commitments pursuant to contracts with certain of our customers. To the extent that we determine that such service levels were not achieved or may not have been achieved, we estimate the amount of credits to be issued and record a corresponding reduction to revenue in the period that the service level commitment was not met or may not be met.

Customer payments are made based on billing schedules included in our customer contracts, which is typically on a monthly basis.

We defer (or capitalize) incremental contract acquisition and fulfillment costs and recognize (or amortize) such costs over the average contract life. Our deferred contract costs for our customers have average amortization periods of approximately 32 months for mass markets customers and 30 months for business customers. These deferred costs are periodically monitored to reflect any significant change in assumptions.

See Note 4—Revenue Recognition for additional information.

Advertising Costs

Costs related to advertising are expensed as incurred and included in selling, general and administrative expenses in our consolidated statements of operations. Our advertising expense was \$62 million, \$56 million and \$56 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Legal Costs

In the normal course of our business, we incur costs to hire and retain external legal counsel to advise us on regulatory, litigation and other matters. Subject to certain exceptions, we expense these costs as the related services are received.

Income Taxes

We file a consolidated federal income tax return with our eligible subsidiaries. The provision for income taxes reflects taxes currently payable, tax consequences deferred to future periods and adjustments to our liabilities for uncertain tax positions. We record deferred income tax assets and liabilities reflecting future tax consequences attributable to tax net operating loss carryforwards ("NOLs"), tax credit carryforwards and differences between the financial statement carrying value of assets and liabilities and the tax basis of those assets and liabilities. Deferred taxes are computed using enacted tax rates expected to apply in the year in which the differences are expected to affect taxable income. The effect on deferred income tax assets and liabilities of a change in tax rate is recognized in earnings in the period that includes the enactment date.

We establish valuation allowances when necessary to reduce deferred income tax assets to the amounts that we believe are more likely than not to be recovered. Each quarter we evaluate the need to retain or adjust each valuation allowance on our deferred tax assets. See Note 16—Income Taxes for additional information.

Cash and Cash Equivalents

Cash and cash equivalents include highly liquid investments that are readily convertible into cash and are not subject to significant risk from fluctuations in interest rates. As a result, the value at which cash and cash equivalents are reported in our consolidated financial statements approximates their fair value. In evaluating investments for classification as cash equivalents, we require that individual securities have original maturities of ninety days or less and that individual investment funds have dollar-weighted average maturities of ninety days or less. To preserve capital and maintain liquidity, we invest with financial institutions we deem to be of sound financial condition and in high quality and relatively risk-free investment products. Our cash investment policy limits the concentration of investments with specific financial institutions or among certain products and includes criteria related to credit worthiness of any particular financial institution.

Book overdrafts occur when we have issued checks but they have not yet been presented to our controlled disbursement bank accounts for payment. Disbursement bank accounts allow us to delay funding of issued checks until the checks are presented for payment. Until the issued checks are presented for payment, the book overdrafts are included in accounts payable on our consolidated balance sheets. This activity is included in the operating activities section in our consolidated statements of cash flows. There were no book overdrafts included in accounts payable at December 31, 2022 or 2021.

Restricted Cash

Restricted cash consists primarily of cash and investments that collateralize our outstanding letters of credit and certain performance and operating obligations. Restricted cash and securities are recorded as current or non-current assets in the consolidated balance sheets depending on the duration of the restriction and the purpose for which the restriction exists. Restricted securities are stated at cost which approximated their fair value as of December 31, 2022 and 2021.

Accounts Receivable and Allowance for Credit Losses

Accounts receivable are recognized based upon the amount due from customers for the services provided or at cost for purchased and other receivables, less an allowance for credit losses. We use a loss rate method to estimate our allowance for credit losses. For more information on our methodology for estimating our allowance for credit losses, see Note 6—Credit Losses on Financial Instruments.

We generally consider our accounts past due if they are outstanding over 30 days. Our past due accounts are written off against our allowance for credit losses when collection is considered to be not probable. Any recoveries of accounts previously written off are generally recognized as a reduction in bad debt expense in the period received. The carrying value of accounts receivable net of the allowance for credit losses approximates fair value. Accounts receivable balances acquired in a business combination are recorded at fair value for all balances receivable at the acquisition date and at the invoiced amount for those amounts invoiced after the acquisition date.

Property, Plant and Equipment

We record property, plant and equipment acquired in connection with our acquisitions based on its estimated fair value as of its acquisition date plus the estimated value of any associated legally or contractually required retirement obligations. We record purchased and constructed property, plant and equipment at cost, plus the estimated value of any associated legally or contractually required retirement obligations. We depreciate the majority of our property, plant and equipment using the straight-line group method over the estimated useful lives of groups of assets, but depreciate certain of our assets using the straight-line method over the estimated useful lives of the specific asset. Under the straight-line group method, assets dedicated to providing telecommunications services (which comprise the majority of our property, plant and equipment) that have similar physical characteristics, use and expected useful lives are pooled for purposes of depreciation and tracking. The equal life group procedure is used to establish each pool's average remaining useful life. Generally, under the straight-line group method, when an asset is sold or retired in the course of normal business activities, the cost is deducted from property, plant and equipment and charged to accumulated depreciation without recognition of a gain or loss. A gain or loss is recognized in our consolidated statements of operations only if a disposal is unusual. Leasehold improvements are amortized over the shorter of the useful lives of the assets or the expected lease term. Expenditures for maintenance and repairs are expensed as incurred. During the construction phase of network and other internal-use capital projects, we capitalize related employee and interest costs. Property, plant and equipment supplies used internally are carried at average cost, except for significant individual items which are carried at actual cost.

We perform annual internal reviews to evaluate the reasonableness of the depreciable lives for our property, plant and equipment. Our reviews utilize models that take into account actual usage, physical wear and tear, replacement history, assumptions about technology evolution and, in certain instances, actuarially determined probabilities to estimate the remaining useful life of our asset base. Our remaining useful life assessments evaluate the possible loss in service value of assets that may precede the physical retirement. Assets shared among many customers may lose service value as those customers reduce their use of the asset. However, the asset is not retired until all customers no longer utilize the asset and we determine there is no alternative use for the asset.

We have asset retirement obligations associated with the legally or contractually required removal of a limited group of property, plant and equipment assets from leased properties and the disposal of certain hazardous materials present in our owned properties. When an asset retirement obligation is identified, usually in association with the acquisition of the asset, we record the fair value of the obligation as a liability. The fair value of the obligation is also capitalized as property, plant and equipment and then amortized over the estimated remaining useful life of the associated asset. Where the removal obligation is not legally binding, the net cost to remove assets is expensed in the period in which the costs are actually incurred.

We review long-lived tangible assets for impairment whenever facts and circumstances indicate that the carrying amounts of the assets may not be recoverable. For assessment purposes, long-lived assets are grouped with other assets and liabilities at the lowest identifiable level for which we generate cash flows independently of other groups of assets and liabilities, absent a material change in operations. An impairment loss is recognized only if the carrying amount of the asset group is not recoverable and exceeds its estimated fair value. Recoverability of the asset group to be held and used is assessed by comparing the carrying amount of the asset group to the estimated undiscounted future net cash flows expected to be generated by the asset group. If the asset group's carrying value is not recoverable, we recognize an impairment charge for the amount by which the carrying amount of the asset group exceeds its estimated fair value.

Goodwill, Customer Relationships and Other Intangible Assets

Intangible assets arising from business combinations, such as goodwill, customer relationships, capitalized software, trademarks and trade names, are initially recorded at estimated fair value. We amortize customer relationships primarily over an estimated life of 7 to 14 years, using the straight-line method, depending on the type of customer. Certain customer relationship intangible assets became fully amortized at the end of the first quarter 2021 using the sum-of-years-digits method, which is no longer used for any of our remaining intangible assets. We amortize capitalized software using the straight-line method primarily over estimated lives ranging up to 7 years. We amortize our other intangible assets using the straight-line method over an estimated life of 9 to 20 years. Other intangible assets not arising from business combinations are initially recorded at cost. Where there are no legal, regulatory, contractual or other factors that would reasonably limit the useful life of an intangible asset, we classify the intangible asset as indefinite-lived and such intangible assets are not amortized.

Internally used software, whether purchased or developed by us, is capitalized and amortized using the straight-line method over its estimated useful life. We have capitalized certain costs associated with software such as costs of employees devoted to software development and external direct costs for materials and services. Costs associated with software to be used for internal purposes are expensed until the point at which the project has reached the development stage. Subsequent additions, modifications or upgrades to internal-use software are capitalized only to the extent that they allow the software to perform a task it previously did not perform. Software maintenance, data conversion and training costs are expensed in the period in which they are incurred. We review the remaining economic lives of our capitalized software annually. Capitalized software is included in other intangible assets, net, in our consolidated balance sheets.

Our long-lived intangible assets, other than goodwill, with indefinite lives are assessed for impairment annually, or, under certain circumstances, more frequently, such as when events or changes in circumstances indicate there may be an impairment. These assets are carried at the estimated fair value at the time of acquisition and assets not acquired in acquisitions are recorded at historical cost. However, if their estimated fair value is less than the carrying amount, we recognize an impairment charge for the amount by which the carrying amount of these assets exceeds their estimated fair value.

We are required to assess our goodwill for impairment annually, or more frequently if an event occurs or circumstances change that indicates it is more likely than not the fair values of any of our reporting units were less than their carrying values. We are required to write-down the value of goodwill of our reporting units in periods in which the recorded carrying value of any such unit exceeds its fair value of equity. Our reporting units are not discrete legal entities with discrete full financial statements. Therefore, the equity carrying value and future cash flows are assessed each time a goodwill impairment assessment is performed on a reporting unit. To do so, we assign our assets, liabilities and cash flows to reporting units using allocation methodologies which we believe are reasonable and consistent. This process entails various estimates, judgments and assumptions.

We are required to reassign goodwill to reporting units whenever reorganizations of our internal reporting structure changes the composition of our reporting units. Goodwill is reassigned to the reporting units using a relative fair value approach. When the fair value of a reporting unit is available, we allocate goodwill based on the relative fair value of the reporting units. When fair value is not available, we utilize an alternative allocation methodology that we believe represents a reasonable approximation of the fair value of the operations being reorganized.

For more information, see Note 3—Goodwill, Customer Relationships and Other Intangible Assets.

Derivatives and Hedging

From time to time we have used derivative instruments to hedge exposure to interest rate risks arising from fluctuation in interest rates. We account for derivative instruments in accordance with ASC 815, *Derivatives and Hedging*, which establishes accounting and reporting standards for derivative instruments. We do not use derivative financial instruments for speculative purposes.

Derivatives are recognized in the consolidated balance sheets at their fair values. When we become a party to a derivative instrument and intend to apply hedge accounting, we formally document the hedge relationship and the risk management objective for undertaking the hedge, which includes designating the instrument for financial reporting purposes as a fair value hedge, a cash flow hedge, or a net investment hedge.

As of December 31, 2022, we held no swap agreements since all of our variable-to-fixed interest rate swap agreements in place at the beginning of the year expired during the first half of 2022. While we held these agreements, we evaluated the effectiveness as described in Note 15—Derivative Financial Instruments (designated as cash-flow hedges) qualitatively on a quarterly basis. The change in the fair value of the interest rate swaps was reflected in accumulated other comprehensive loss and subsequently reclassified into earnings in the period the hedged transaction affects earnings, by virtue of qualifying as effective cash flow hedges. For more information see Note 15—Derivative Financial Instruments.

Pension and Post-Retirement Benefits

We recognize the funded status of our defined benefit and post-retirement plans as an asset or a liability on our consolidated balance sheets. Each year's actuarial gains or losses are a component of our other comprehensive income (loss), which is then included in our accumulated other comprehensive loss. Pension and post-retirement benefit expenses are recognized over the period in which the employee renders service and becomes eligible to receive benefits. We make significant assumptions (including the discount rate, expected rate of return on plan assets, mortality and health care trend rates) in computing the pension and post-retirement benefits expense and obligations. See Note 11—Employee Benefits for additional information.

Foreign Currency

Local currencies of our foreign subsidiaries are the functional currencies for financial reporting purposes except for certain foreign subsidiaries, primarily in Latin America prior to the August 1, 2022 sale of our Latin American business. For operations outside the United States that have functional currencies other than the U.S. dollar, assets and liabilities are translated to U.S. dollars at period-end exchange rates, and revenue, expenses and cash flows are translated using average monthly exchange rates. A significant portion of our non-United States subsidiaries use either the British pound or the Euro, or used, prior to the August 1, 2022 sale of our Latin American business, the Brazilian Real, as their functional currency, each of which experienced significant fluctuations against the U.S. dollar during the years ended December 31, 2022, 2021 and 2020. We recognize foreign currency translation gains and losses as a component of accumulated other comprehensive loss in stockholders' equity and in our consolidated statements of comprehensive (loss) income in accordance with accounting guidance for foreign currency translation. Prior to the announcement of our divestitures as discussed in Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business, we considered the majority of our investments in our foreign subsidiaries to be long-term in nature. Our foreign currency transaction gains (losses), including where transactions with our non-United States subsidiaries are not considered to be long-term in nature, are included within other income (expense), net on our consolidated statements of operations. See the description of our Assets Held for Sale policy above for more information on assets in foreign subsidiaries to be divested.

Common Stock

As of December 31, 2022, we had 19 million shares authorized for future issuance under our equity incentive plans.

Preferred Stock

Holder of outstanding Lumen Technologies preferred stock are entitled to receive cumulative dividends, receive preferential distributions equal to \$25 per share plus unpaid dividends upon Lumen's liquidation and vote as a single class with the holders of common stock.

Section 382 Rights Plan

We maintain a Section 382 Rights Plan to protect our U.S. federal net operating loss carryforwards from certain Internal Revenue Code Section 382 limitations. Under the plan, one preferred stock purchase right was distributed for each share of our outstanding common stock as of the close of business on February 25, 2019, and those rights currently trade in tandem with the common stock until they expire or detach under the plan. This plan was designed to deter trading that would result in a change of control (as defined in Code Section 382), and therefore protect our ability to use our historical federal NOLs in the future. The plan is scheduled to lapse in late 2023.

Dividends

The declaration and payment of dividends is at the discretion of our Board of Directors. On November 2, 2022, we announced that our Board had terminated our quarterly cash dividend program. Under this revised capital allocation policy, the company plans to continue to invest in growth initiatives.

Recently Adopted Accounting Pronouncements

During 2022, we adopted Accounting Standards Update ("ASU") 2021-10, "*Government Assistance (Topic 832): Disclosures by Business Entities about Government Assistance*" ("ASU 2021-10") and ASU 2021-05, "*Leases (Topic 842): Lessors—Certain Leases with Variable Lease Payments*" ("ASU 2021-05"). During 2021, we adopted ASU 2020-09, "*Debt (Topic 470) Amendments to SEC Paragraphs Pursuant to SEC Release No. 33-10762*" ("ASU 2020-09"), 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*" ("ASU 2020-01"), and ASU 2019-12, "*Simplifying the Accounting for Income Taxes (Topic 740)*" ("ASU 2019-12"). During 2020, we adopted ASU 2016-13, "*Measurement of Credit Losses on Financial Instruments*" ("ASU 2016-13").

Each of these is described further below.

Government Assistance

On January 1, 2022, we adopted ASU 2021-10. This ASU requires business entities to disclose information about certain types of government assistance they receive. Please refer to Note 4—Revenue Recognition for more information.

Leases

On January 1, 2022, we adopted ASU 2021-05. This ASU (i) amends the lease classification requirements for lessors to align them with practice under ASC Topic 840, (ii) provides criteria for lessors to classify and account for a lease with variable lease payments that do not depend on a reference index or a rate as an operating lease; and (iii) provides guidance with respect to net investments by lessors under operating leases and other related topics. The adoption of ASU 2021-05 did not have a material impact to our consolidated financial statements.

Debt

On January 1, 2021, we adopted ASU 2020-09. This ASU amends and supersedes various SEC guidance to reflect SEC Release No. 33-10762, which includes amendments to the financial disclosure requirements applicable to registered debt offerings that include credit enhancements, such as subsidiary guarantees. The adoption of ASU 2020-09 did not have a material impact to our consolidated financial statements.

Investments

On January 1, 2021, we adopted ASU 2020-01. This ASU, among other things, clarifies that a company should consider observable transactions that require a company to either apply or discontinue the equity method of accounting under Topic 323, Investments - Equity Method and Joint Ventures, for the purposes of applying the measurement alternative in accordance with Topic 321 immediately before applying or upon discontinuing the equity method. As of December 31, 2022, we determined there was no application or discontinuation of the equity method during the reporting periods covered in this report. The adoption of ASU 2020-01 did not have a material impact to our consolidated financial statements.

Income Taxes

On January 1, 2021, we adopted ASU 2019-12. This ASU removes certain exceptions for investments, intra-period allocations and interim calculations, and adds guidance to reduce complexity in accounting for income taxes. The adoption of ASU 2019-12 did not have a material impact to our consolidated financial statements.

Measurement of Credit Losses on Financial Instruments

We adopted ASU 2016-13 on January 1, 2020 and recognized a cumulative adjustment to our accumulated deficit as of the date of adoption of \$9 million, net of tax effect of \$2 million. Please refer to Note 6—Credit Losses on Financial Instruments for more information.

Recently Issued Accounting Pronouncements

In December 2022, the Financial Accounting Standards Board (“FASB”) issued ASU 2022-06, “*Reference Rate Reform (Topic 848) – Deferral of the Sunset Date of Topic 848*” (“ASU 2022-06”). These amendments extend the period of time preparers can utilize the reference rate reform relief guidance in Topic 848, which defers the sunset date from December 31, 2022, to December 31, 2024, after which entities will no longer be permitted to apply the relief in Topic 848. ASU 2022-06 is effective upon issuance. Based on our review of our key material contracts through December 31, 2022, ASU 2022-06 does not have a material impact to our consolidated financial statements.

In September 2022, the FASB issued ASU 2022-04, “*Liabilities-Supplier Finance Program (Subtopic 405-50): Disclosure of Supplier Finance Program Obligations*” (“ASU 2022-04”). These amendments require that a company that uses a supplier finance program in connection with the purchase of goods or services disclose sufficient information about the program to allow a user of financial statements to understand the program’s nature, program activity during the period, changes from period to period and potential magnitude of program transactions. ASU 2022-04 will become effective for us in the first quarter of fiscal 2023. As of December 31, 2022, we are reviewing our supplier finance agreements to determine the impact to disclosures in our consolidated financial statements.

In June 2022, the FASB issued ASU 2022-03, “*Fair Value Measurement (Topic 820): Fair Value Measurement of Equity Securities Subject to Contractual Sale Restrictions*” (“ASU 2022-03”). These amendments clarify that a contractual restriction on the sales of an investment in equity security is not considered part of the unit of account of the equity security and, therefore, is not considered in measuring fair value. ASU 2022-03 will become effective for us in the first quarter of fiscal 2023 and early adoption is permitted. As of December 31, 2022, we do not expect ASU 2022-03 to have an impact to our consolidated financial statements.

In March 2022, the FASB issued ASU 2022-02, “*Financial Instruments-Credit Losses (Topic 326): Troubled Debt Restructurings (“TDR”) and Vintage Disclosures*” (“ASU 2022-02”). These amendments eliminate the TDR recognition and measurement guidance, enhance existing disclosure requirements and introduce new requirements related to certain modifications of receivables made to borrowers experiencing financial difficulty. ASU 2022-02 will become effective for us in the first quarter of fiscal 2023 and early adoption is permitted. As of December 31, 2022, we do not expect ASU 2022-02 to have an impact to our consolidated financial statements.

In March 2022, the FASB issued ASU 2022-01, “*Derivatives and Hedging (Topic 815): Fair Value Hedging-Portfolio Layer Method*” (“ASU 2022-01”). The ASU expands the current single-layer method to allow multiple hedged layers of a single closed portfolio under the method. ASU 2022-01 will become effective for us in the first quarter of fiscal 2023 and early adoption is permitted. As of December 31, 2022, we do not expect ASU 2022-01 to have an impact to our consolidated financial statements.

In October 2021, the FASB issued ASU 2021-08, "*Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*" ("ASU 2021-08"), which requires entities to apply Topic 606 to recognize and measure contract assets and contract liabilities in a business combination. ASU 2021-08 will become effective for us in the first quarter of fiscal 2023 and early adoption is permitted. As of December 31, 2022, we do not expect ASU 2021-08 to have an impact to our consolidated financial statements.

In January 2021, the FASB issued ASU 2021-01, "*Reference Rate Reform (Topic 848): Scope*" ("ASU 2021-01"), which clarifies that certain optional expedients and exceptions in Topic 848 for contract modifications and hedge accounting apply to derivatives that are affected by the discounting transition. ASU 2021-01 also amends the expedients and exceptions in Topic 848 to capture the incremental consequences of the scope clarification and to tailor the existing guidance to derivative instruments affected by the discounting transition. These amendments may be applied prospectively to contract modifications made and hedging relationships entered into or evaluated on or before December 31, 2022. ASU 2021-01 provides optional expedients for a limited time to ease the potential burden in accounting for reference rate reform. Based on our review of our key material contracts through December 31, 2022, ASU 2021-01 will not have a material impact to our consolidated financial statements.

In March 2020, the FASB issued ASU 2020-04, "*Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting*" ("ASU 2020-04" or "Reference Rate Reform"), designed to ease the burden of accounting for contract modifications related to the global market-wide reference rate transition period. Subject to certain criteria, ASU 2020-04 provides qualifying entities the option to apply expedients and exceptions to contract modifications and hedging accounting relationships made until December 31, 2022. These amendments are effective immediately and may be applied prospectively to contract modifications made and hedging relationships entered into or evaluated on or before December 31, 2022. ASU 2020-04 provides optional guidance for a limited time to ease the potential burden in accounting for reference rate reform. Based on our review of our key material contracts through December 31, 2022, we do not expect ASU 2020-04 to have a material impact on the consolidated financial statements.

(2) Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business

Latin American Business

On August 1, 2022, affiliates of Level 3 Parent, LLC, an indirect wholly-owned subsidiary of Lumen Technologies, Inc., sold Lumen's Latin American business pursuant to a definitive agreement dated July 25, 2021, for pre-tax cash proceeds of approximately \$2.7 billion.

For the year ended December 31, 2022, we recorded a \$597 million net pre-tax gain on disposal associated with the sale of our Latin American business. This gain is reflected as operating income within the consolidated statements of operations.

In connection with the sale, we entered into a transition services agreement under which we provide the purchaser various support services. In addition, Lumen and the purchaser entered into commercial agreements whereby they provide each other various network and other commercial services. In addition, we agreed to indemnify the purchaser for certain matters for which future cash payments by Lumen could be required. Lumen has estimated the fair value of these indemnifications to be \$86 million, which is included in other long-term liabilities in our consolidated balance sheet and has reduced our gain on the sale accordingly.

The Latin American business was included in our continuing operations and classified as assets and liabilities held for sale on our consolidated balance sheets through the closing of the transaction on August 1, 2022. As a result of closing the transaction, we derecognized net assets of \$1.9 billion, primarily made up of (i) property, plant and equipment, net of accumulated depreciation, of \$1.7 billion, (ii) goodwill of \$245 million, (iii) other intangible assets, net of accumulated amortization, of \$140 million, and (iv) deferred income tax liabilities, net, of \$154 million. In addition, we reclassified \$112 million of realized loss on foreign currency translation, net of tax, to partially offset the gain on sale of our Latin American business.

ILEC Business

On October 3, 2022, we and certain of our affiliates sold the portion of our incumbent local exchange ("ILEC") business primarily conducted within 20 Midwestern and Southeastern states to affiliates of funds advised by Apollo Global Management, Inc. In exchange, we received \$7.5 billion of consideration, which was reduced by approximately \$0.4 billion of closing adjustments and partially paid through purchaser's assumption of approximately \$1.5 billion of our long-term consolidated indebtedness, resulting in pre-tax cash proceeds of approximately \$5.6 billion, subject to certain post-closing adjustments and indemnities.

For the year ended December 31, 2022, we recorded a \$176 million net pre-tax gain on disposal associated with the sale of our ILEC business. This gain is reflected as operating income within the consolidated statements of operations.

In connection with the sale, we have entered into a transition services agreement under which we provide the purchaser various support services. In addition, Lumen and the purchaser entered into commercial agreements whereby they provide each other various network and other commercial services. Under these agreements, we have committed to ordering services of approximately \$373 million from the purchaser over a period of three years and the purchaser has committed to ordering services of approximately \$67 million from us over a period of three years. We also agreed to indemnify the purchaser for certain matters for which future cash payments by Lumen are expected. Lumen has estimated the fair value of these indemnifications to be \$89 million, which is included in other current liabilities in our consolidated balance sheet and has increased our income tax expense accordingly.

The ILEC business was included in our continuing operations and classified as assets and liabilities held for sale on our consolidated balance sheets through the closing of the transaction on October 3, 2022. As a result of closing the transaction, we derecognized net assets of \$4.8 billion, primarily made up of (i) property, plant and equipment, net of accumulated depreciation, of \$3.6 billion, (ii) goodwill of \$2.6 billion and (iii) long-term debt, net of discounts, of \$1.4 billion. In addition, we reclassified \$403 million of net actuarial loss and prior service credit related to the Lumen Pension Plan, net of tax, conveyed to the purchaser to partially offset the gain on the sale of our ILEC business.

EMEA Business

On November 2, 2022, affiliates of Level 3 Parent, LLC, an indirect wholly-owned subsidiary of Lumen Technologies, Inc., granted an option to Colt Technology Services Group Limited, a portfolio company of Fidelity Investments, to purchase certain of their operations in Europe, the Middle East and Africa (the "EMEA business"), in exchange for \$1.8 billion in cash, subject to certain working capital and other purchase price adjustments. Following the completion of a French consultative process, Colt exercised its option and on February 8, 2023, the parties entered into a definitive purchase agreement, which contains various customary covenants for transactions of this type including various indemnities. Level 3 Parent, LLC expects to close the transaction as early as late 2023, following receipt of all requisite regulatory approvals in the U.S. and certain countries where the EMEA business operates, as well as the satisfaction of other customary conditions.

The actual amount of our net after-tax proceeds from this divestiture could vary substantially from the amounts we currently estimate, particularly if we experience delays in completing the transaction or if any of our other assumptions prove to be incorrect.

We do not believe these divestiture transactions represent a strategic shift for Lumen. Therefore, neither of the divested businesses discussed above, nor the planned divestiture of the EMEA business meet the criteria to be classified as discontinued operations. As a result, we continued to report our operating results for the Latin American and ILEC businesses in our consolidated operating results through their respective disposal dates of August 1, 2022 and October 3, 2022, and we will continue to report our operating results for the EMEA business (the "disposal group") in our consolidated operating results until the transaction is closed.

As of December 31, 2022 in the accompanying consolidated balance sheet, the assets and liabilities of our EMEA business are classified as held for sale and measured at the lower of (i) the carrying value when we classified the disposal group as held for sale and (ii) the fair value of the disposal group, less costs to sell. Effective with the designation of the disposal group as held for sale on November 2, 2022, we suspended recording depreciation of property, plant and equipment and amortization of finite-lived intangible assets and right-of-use assets while these assets are classified as held for sale. We estimate that we would have recorded an additional \$51 million of depreciation, intangible amortization, and amortization of right-of-use assets for the year ended December 31, 2022 if the EMEA business did not meet the held for sale criteria.

The classification of the EMEA business as held for sale was considered an event or change in circumstance which required an assessment of our goodwill for impairment. We performed a pre-classification and post-classification goodwill impairment test as described further in Note 3— Goodwill, Customer Relationships and Other Intangible Assets. As a result of our impairment tests, we determined the EMEA business disposal group was impaired resulting in a non-cash, non-tax-deductible goodwill impairment charge of \$43 million. As a result of our evaluation of the recoverability of the carrying value of the assets and liabilities held for sale relative to the agreed upon sales price, adjusted for costs to sell, we recorded an estimated loss on disposal of \$660 million during the year ended December 31, 2022 in the consolidated statement of operations and a valuation allowance included in assets held for sale on the consolidated balance sheet. We will perform this evaluation each reporting period until disposal and, based on subsequent remeasurements, we will adjust the valuation allowance in assets held for sale (including any gain, limited to the original value).

The principal components of the held for sale assets and liabilities of the EMEA business are as follows:

	December 31, 2022	
	EMEA Business	
	(Dollars in millions)	
Assets held for sale		
Cash and cash equivalents	\$	43
Accounts receivable, less allowance of \$5		76
Other current assets		59
Property, plant and equipment, net accumulated depreciation of \$1,033		1,873
Goodwill ⁽¹⁾		—
Customer relationships and other intangibles, net		100
Operating lease assets		156
Valuation allowance on assets held for sale ⁽²⁾		(660)
Deferred tax assets		138
Other non-current assets		38
Total assets held for sale	\$	<u>1,823</u>
Liabilities held for sale		
Accounts payable	\$	78
Salaries and benefits		23
Current portion of deferred revenue		28
Current operating lease liabilities		33
Other current liabilities		28
Deferred income taxes		38
Asset retirement obligations		30
Deferred revenue, non-current		85
Operating lease liabilities, non-current		103
Total liabilities held for sale	\$	<u>446</u>

⁽¹⁾ The assignment of goodwill was based on the relative fair value of the applicable reporting unit prior to being classified as held for sale. Prior to classification as held for sale, the goodwill was fully impaired as described in Note 3—Goodwill, Customer Relationships and Other Intangible Assets.

⁽²⁾ Includes the impact of \$365 million, primarily related to loss on foreign currency translation, expected to be reclassified out of accumulated other comprehensive loss upon close of the sale.

(3) Goodwill, Customer Relationships and Other Intangible Assets

Goodwill, customer relationships and other intangible assets consisted of the following:

	As of December 31,	
	2022 ⁽¹⁾	2021 ⁽¹⁾
	(Dollars in millions)	
Goodwill	\$ 12,657	15,986
Indefinite-lived intangible assets	\$ 9	9
Other intangible assets subject to amortization:		
Customer relationships, less accumulated amortization of \$3,606 and \$11,740 ⁽²⁾	4,574	5,365
Capitalized software, less accumulated amortization of \$3,895 and \$3,624	1,482	1,459
Trade names, patents and other, less accumulated amortization of \$188 and \$160	101	137
Total other intangible assets, net	\$ 6,166	6,970

⁽¹⁾ These values exclude assets classified as held for sale.

⁽²⁾ Certain customer relationships with a gross carrying value of \$8.7 billion became fully amortized during 2021 and were retired during the first quarter of 2022.

As of December 31, 2022, the gross carrying amount of goodwill, customer relationships, indefinite-lived and other intangible assets was \$26.5 billion.

Our goodwill was derived from numerous acquisitions where the purchase price exceeded the fair value of the net assets acquired.

We are required to assess our goodwill and other indefinite-lived intangible assets for impairment annually, or, under certain circumstances, more frequently, such as when events or changes in circumstances indicate there may be impairment. Our annual impairment assessment date for indefinite-lived intangible assets other than goodwill is December 31. We completed our qualitative assessment of our indefinite-lived intangible assets other than goodwill as of December 31, 2022 and 2021 and concluded it is more likely than not that our indefinite-lived intangible assets are not impaired; thus, no impairment charge for these assets was recorded in 2022 or 2021. We are required to write down the value of goodwill only when our assessment determines the carrying value of equity of any of our reporting units exceeds its fair value. Our annual impairment assessment date for goodwill is October 31, at which date we assess our reporting units.

We report our results within two segments: Business and Mass Markets. See Note 17—Segment Information for more information on these segments and the underlying sales channels. As of December 31, 2022, we had three reporting units for goodwill impairment testing, which are (i) Mass Markets, (ii) North America Business ("NA Business") and (iii) Asia Pacific ("APAC") region. Prior to the planned divestiture of the EMEA business, the EMEA region was also a reporting unit and was tested for impairment in the pre-classification test as of October 31, 2022 discussed below. Prior to its August 1, 2022 divestiture, the Latin American ("LATAM") region was also a reporting unit. At October 31, 2020 we used eight reporting units for goodwill impairment testing, which were consumer, small and medium business, enterprise, wholesale, North American global accounts ("NA GAM"), EMEA, LATAM and APAC.

Our reporting units are not discrete legal entities with discrete full financial statements. Our assets and liabilities are employed in and relate to the operations of multiple reporting units. For each reporting unit, we compare its estimated fair value of equity to its carrying value of equity that we assign to the reporting unit. If the estimated fair value of the reporting unit is greater than the carrying value, we conclude that no impairment exists. If the estimated fair value of the reporting unit is less than the carrying value, we record a non-cash impairment charge equal to the excess amount. Depending on the facts and circumstances, we typically estimate the fair value of our reporting units by considering either or both of (i) a discounted cash flow method, which is based on the present value of projected cash flows over a discrete projection period and a terminal value, which is based on the expected normalized cash flows of the reporting units following the discrete projection period, and (ii) a market approach, which includes the use of market multiples of publicly-traded companies whose services are comparable to ours.

2022 Goodwill Impairment Analyses

As of October 31, 2022, we estimated the fair value of our four above-mentioned reporting units by considering both a market approach and a discounted cash flow method. We discounted the projected cash flows for our Mass Markets, NA Business, EMEA and APAC reporting units using a rate that represented their weighted average cost of capital as of the assessment date, which comprised an after-tax cost of debt and a cost of equity, as disclosed in the table below. We utilized company comparisons and analyst reports within the telecommunications industry which at the time of assessment supported a range of fair values derived from annualized revenue and earnings before interest, taxes, depreciation and amortization ("EBITDA") multiples between 1.8x and 4.6x and 4.7x and 10.8x, respectively. We selected a revenue and EBITDA multiple for each of our reporting units, resulting in an overall company revenue and EBITDA multiple of 2.5x and 5.5x, respectively. We also reconciled the estimated fair values of the reporting units to our market capitalization as of October 31, 2022 and concluded that the indicated control premium of approximately 59% was reasonable based on recent market transactions, including our divestitures, and our depressed stock price. Due to the depressed trading price of our stock at October 31, 2022, and our assessment performed with respect to the reporting units described above, we concluded that the estimated fair value of our NA Business reporting unit was less than our carrying value of equity for that reporting unit, resulting in a non-cash, non-tax-deductible goodwill impairment charge of approximately \$3.2 billion. See the goodwill rollforward by segment table below for the impairment charges by segment. As of October 31, 2022, the estimated fair value of equity exceeded the carrying value of equity for our Mass Markets, EMEA and APAC reporting units by 97%, 171% and 101%, respectively. Based on our assessments performed, we concluded that the goodwill assigned to our Mass Markets, EMEA and APAC reporting units was not impaired at October 31, 2022.

	As of October 31, 2022			
	Reporting Units			
	Mass Markets	NA Business	EMEA	APAC
Weighted average cost of capital	9.4 %	9.4 %	9.8 %	11.3 %
After-tax cost of debt	4.7 %	4.7 %	5.1 %	6.3 %
Cost of equity	14.0 %	14.0 %	14.4 %	16.2 %

The classification of held for sale related to the EMEA business as described in Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business was considered an event or change in circumstance which required an assessment of our goodwill for impairment as of October 31, 2022. We performed a pre-announcement goodwill impairment test described above to determine whether there was an impairment prior to the classification of these assets as held for sale and to determine the November 2, 2022, fair values to be utilized for goodwill allocation regarding the disposal group to be classified as assets held for sale. We also performed a post-announcement goodwill impairment test using our estimated post-divestiture cash flows and carrying value of equity to evaluate whether the fair value of our NA Business, Mass Markets and APAC reporting units that will remain following the divestiture exceeds the carrying value of the equity of such reporting units after classification of assets held for sale. We concluded no impairment existed of our reporting units that remain following the divestiture.

Separate from the annual, pre-announcement and post-announcement goodwill assessments discussed above, we performed an assessment of our EMEA business disposal group for impairment using the purchase price compared to the carrying value of the EMEA business net assets. As a result, the EMEA business disposal group was impaired, resulting in a non-cash, non-tax-deductible goodwill impairment charge of \$43 million. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business for additional information regarding the purchase price, carrying value, and impairment for goodwill of the EMEA business. See the goodwill rollforward by segment table below for the impairment charges by segment.

2021 Goodwill Impairment Analyses

At October 31, 2021, we estimated the fair value of our five above-mentioned reporting units by considering both a market approach and a discounted cash flow method. As of October 31, 2021, we determined that the estimated fair value of equity exceeded the carrying value of equity for our Mass Markets, NA Business, EMEA, LATAM and APAC reporting units by 277%, 8%, 57%, 100% and 125%, respectively. Based on our assessments performed, we concluded it was more likely than not that the fair value of each of our reporting units exceeded the carrying value of equity of those reporting units at October 31, 2022. Therefore, we concluded no impairment existed as of our assessment date.

Our classification of held for sale assets related to the divestitures of the Latin American and ILEC businesses on August 1, 2022 and October 3, 2022, respectively, as described in Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business, was considered an event or change in circumstance which required an assessment of our goodwill for impairment as of July 31, 2021. We performed a pre-classification goodwill impairment test to determine whether there was an impairment prior to the classification of these assets and to determine the July 31, 2021 fair values to be utilized for goodwill allocation regarding the Latin American and ILEC businesses classified as assets held for sale. We concluded it was more likely than not that the fair value of each of our reporting units exceeded the carrying value of equity of those reporting units at July 31, 2021. We also performed a post-classification goodwill impairment test using our estimated post-divestiture cash flows and carrying value of equity to evaluate whether the fair value of our reporting units that would remain following the divestitures exceeded the carrying value of the equity of such reporting units after classification of assets held for sale. At July 31, 2021, we estimated the fair value of our five above-mentioned reporting units by considering both a market approach and a discounted cash flow method. As of July 31, 2021, we determined that the estimated fair value of equity exceeded the carrying value of equity for our Mass Markets, NA Business, EMEA, LATAM and APAC reporting units by 150%, 24%, 58%, 100% and 134%, respectively. Based on our assessments performed, we concluded it was more likely than not that the fair value of each of our reporting units exceeded the carrying value of equity of our reporting units at July 31, 2021. Therefore, we concluded no impairment existed as of our assessment date.

The January 2021 internal reorganization of our reporting structure was considered an event or change in circumstance which required an assessment of our goodwill for impairment. We performed a qualitative impairment assessment in the first quarter of 2021 and concluded it was more likely than not that the fair value of each of our reporting units exceeded the carrying value of equity of those reporting units at January 31, 2021. Therefore, we concluded no impairment existed as of our assessment date.

2020 Goodwill Impairment Analyses

At October 31, 2020, we estimated the fair value of our eight above-mentioned reporting units (prior to the January 2021 reorganization) by considering both a market approach and a discounted cash flow method. We discounted the projected cash flows for our consumer, enterprise, wholesale, small and medium business, NA GAM, EMEA, LATAM and APAC reporting units using a rate that represented their weighted average cost of capital as of the assessment date, which comprised an after-tax cost of debt and a cost of equity, as disclosed in the table below. We utilized company comparisons and analyst reports within the telecommunications industry which at the time of assessment supported a range of fair values derived from annualized revenue and EBITDA multiples between 2.0x and 5.5x and 4.8x and 12.5x, respectively. We selected a revenue and EBITDA multiple for each of our reporting units, resulting in an overall company revenue and EBITDA multiple of 2.3x and 5.7x, respectively. We also reconciled the estimated fair values of the reporting units to our market capitalization as of October 31, 2020 and concluded that the indicated control premium of approximately 33% was reasonable based on recent market transactions. Due to the depressed trading price of our stock at October 31, 2020 and our assessment performed with respect to the reporting units described above, we concluded that the estimated fair value of our consumer, wholesale, small and medium business and EMEA reporting units was less than our carrying value of equity for those reporting units. As a result, these reporting units were impaired, resulting in a non-cash, non-tax-deductible goodwill impairment charge of approximately \$2.6 billion. As of October 31, 2020, the estimated fair value of equity exceeded the carrying value of equity for our enterprise, NA GAM, LATAM and APAC reporting units by 2%, 46%, 74% and 23%, respectively. Based on our assessments performed, we concluded that the goodwill assigned to our enterprise, NA GAM, LATAM and APAC reporting units was not impaired at October 31, 2020.

	As of October 31, 2020			
	Reporting Units			
	Consumer, Enterprise, Wholesale, Small and medium business, and NA GAM	EMEA	LATAM	APAC
Weighted average cost of capital	7.6 %	8.0 %	14.3 %	10.1 %
After-tax cost of debt	2.5 %	2.9 %	6.9 %	3.9 %
Cost of equity	10.7 %	11.2 %	18.8 %	14.0 %

The following table shows the rollforward of goodwill assigned to our reportable segments (including the January 2021 reorganization discussed above) from December 31, 2020 through December 31, 2022.

	International and Global Accounts	Enterprise	Small and Medium Business	Wholesale	Consumer	Business	Mass Markets	Total
(Dollars in millions)								
As of December 31, 2020 ⁽¹⁾	\$ 2,555	4,738	2,808	3,114	5,655	—	—	18,870
January 2021 reorganization	(2,555)	(4,738)	(2,808)	(3,114)	(5,655)	12,173	6,697	—
Classified as held for sale	—	—	—	—	—	(913)	(1,946)	(2,859)
Effect of foreign currency exchange rate change and other	—	—	—	—	—	(25)	—	(25)
As of December 31, 2021 ⁽¹⁾	\$ —	—	—	—	—	11,235	4,751	15,986

	Business	Mass Markets	Total
(Dollars in millions)			
As of December 31, 2021 ⁽¹⁾	\$ 11,235	4,751	15,986
Effect of foreign currency exchange rate change and other	(58)	—	(58)
Impairment	(3,271)	—	(3,271)
As of December 31, 2022 ⁽¹⁾	\$ 7,906	4,751	12,657

⁽¹⁾ Goodwill at December 31, 2022, December 31, 2021 and December 31, 2020 is net of accumulated impairment losses of \$11.0 billion, \$7.7 billion and \$12.9 billion, respectively. The change in accumulated impairment losses at December 31, 2021 is the result of amounts classified as held for sale related to the divestitures of our Latin American and ILEC business on August 1, 2022 and October 3, 2022, respectively. The change in accumulated impairment losses at December 31, 2022 is the result of the impairments discussed above.

For additional information on our segments, see Note 17—Segment Information.

As of December 31, 2022, the weighted average remaining useful lives of our finite-lived intangible assets were approximately 7 years in total, approximately 8 years for customer relationships and 4 years for capitalized software.

Total amortization expense for finite-lived intangible assets for the years ended December 31, 2022, 2021 and 2020 was \$1.1 billion, \$1.3 billion and \$1.7 billion, respectively.

We estimate that total amortization expense for finite-lived intangible assets for the years ending December 31, 2023 through 2027 will be as provided in the table below. As a result of classifying our EMEA business as being held for sale on our December 31, 2022 consolidated balance sheet, the amounts presented below do not include future amortization expense for intangible assets of the business to be divested. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business for more information.

	(Dollars in millions)	
2023	\$	941
2024		871
2025		810
2026		765
2027		687

(4) Revenue Recognition

Product and Service Categories

We categorize our products and services revenue among the following categories for the Business segment:

- *Compute and Application Services*, which include our Edge Cloud services, IT solutions, Unified Communications and Collaboration ("UC&C"), data center, content delivery network ("CDN") and managed security services;
- *IP and Data Services*, which include Ethernet, IP, and VPN data networks, including software-defined wide area networks ("SD WAN") based services, Dynamic Connections and Hyper WAN;
- *Fiber Infrastructure Services*, which include dark fiber, optical services and equipment; and
- *Voice and Other*, which include Time Division Multiplexing ("TDM") voice, private line and other legacy services.

We categorize our products and services revenue among the following categories for the Mass Markets segment:

- *Fiber Broadband*, under which we provide high speed broadband services to residential and small business customers utilizing our fiber-based network infrastructure;
- *Other Broadband*, under which we provide primarily lower speed broadband services to residential and small business customers utilizing our copper-based network infrastructure; and
- *Voice and Other*, under which we derive revenues from (i) providing local and long-distance services, professional services, and other ancillary services, and (ii) federal broadband and state support payments.

Reconciliation of Total Revenue to Revenue from Contracts with Customers

The following tables provide total revenue by segment, sales channel and product category. They also provide the amount of revenue that is not subject to ASC 606, "*Revenue from Contracts with Customers*" ("ASC 606"), but is instead governed by other accounting standards. The amounts in the tables below include the Latin American and ILEC businesses revenues prior to their sales on August 1, 2022 and October 3, 2022, respectively:

Year Ended December 31, 2022

	Total Revenue	Adjustments for Non-ASC 606 Revenue ⁽¹⁾	Total Revenue from Contracts with Customers
	(Dollars in millions)		
Business Segment by Sales Channel and Product Category			
International and Global Accounts ("IGAM")			
Compute and Application Services	\$ 667	(227)	440
IP and Data Services	1,510	—	1,510
Fiber Infrastructure	830	(136)	694
Voice and Other	638	—	638
Total IGAM Revenue	3,645	(363)	3,282
Large Enterprise			
Compute and Application Services	621	(60)	561
IP and Data Services	1,517	—	1,517
Fiber Infrastructure	478	(46)	432
Voice and Other	793	—	793
Total Large Enterprise Revenue	3,409	(106)	3,303
Mid-Market Enterprise			
Compute and Application Services	135	(29)	106
IP and Data Services	1,629	(4)	1,625
Fiber Infrastructure	192	(7)	185
Voice and Other	509	—	509
Total Mid-Market Enterprise Revenue	2,465	(40)	2,425
Wholesale			
Compute and Application Services	242	(157)	85
IP and Data Services	1,115	—	1,115
Fiber Infrastructure	652	(113)	539
Voice and Other	1,511	(239)	1,272
Total Wholesale Revenue	3,520	(509)	3,011
Business Segment by Product Category			
Compute and Application Services	1,665	(473)	1,192
IP and Data Services	5,771	(4)	5,767
Fiber Infrastructure	2,152	(302)	1,850
Voice and Other	3,451	(239)	3,212
Total Business Segment Revenue	13,039	(1,018)	12,021
Mass Markets Segment by Product Category			
Fiber Broadband	604	(18)	586
Other Broadband	2,163	(200)	1,963
Voice and Other	1,672	(134)	1,538
Total Mass Markets Revenue	4,439	(352)	4,087
Total Revenue	\$ 17,478	(1,370)	16,108
Timing of revenue			
Goods and services transferred at a point in time			\$ 154
Services performed over time			15,954
Total revenue from contracts with customers			\$ 16,108

Year Ended December 31, 2021

	Total Revenue	Adjustments for Non-ASC 606 Revenue ⁽¹⁾	Total Revenue from Contracts with Customers
	(Dollars in millions)		
Business Segment by Sales Channel and Product Category			
International and Global Accounts ("IGAM")			
Compute and Application Services	\$ 731	(279)	452
IP and Data Services	1,716	(1)	1,715
Fiber Infrastructure	889	(129)	760
Voice and Other	747	—	747
Total IGAM Revenue	4,083	(409)	3,674
Large Enterprise			
Compute and Application Services	696	(62)	634
IP and Data Services	1,583	—	1,583
Fiber Infrastructure	540	(50)	490
Voice and Other	952	(1)	951
Total Large Enterprise Revenue	3,771	(113)	3,658
Mid-Market Enterprise			
Compute and Application Services	127	(30)	97
IP and Data Services	1,710	(6)	1,704
Fiber Infrastructure	207	(8)	199
Voice and Other	605	—	605
Total Mid-Market Enterprise Revenue	2,649	(44)	2,605
Wholesale			
Compute and Application Services	188	(159)	29
IP and Data Services	1,198	—	1,198
Fiber Infrastructure	622	(118)	504
Voice and Other	1,608	(252)	1,356
Total Wholesale Revenue	3,616	(529)	3,087
Business Segment by Product Category			
Compute and Application Services	1,742	(530)	1,212
IP and Data Services	6,207	(7)	6,200
Fiber Infrastructure	2,258	(305)	1,953
Voice and Other	3,912	(253)	3,659
Total Business Segment Revenue	14,119	(1,095)	13,024
Mass Markets Segment by Product Category			
Fiber Broadband	524	—	524
Other Broadband	2,507	(227)	2,280
Voice and Other	2,537	(570)	1,967
Total Mass Markets Revenue	5,568	(797)	4,771
Total Revenue	\$ 19,687	(1,892)	17,795
Timing of revenue			
Goods and services transferred at a point in time			\$ 138
Services performed over time			17,657
Total revenue from contracts with customers			\$ 17,795

Year Ended December 31, 2020

	Total Revenue	Adjustments for Non-ASC 606 Revenue ⁽¹⁾	Total Revenue from Contracts with Customers
	(Dollars in millions)		
Business Segment by Sales Channel and Product Category			
International and Global Accounts ("IGAM")			
Compute and Application Services	\$ 759	(265)	494
IP and Data Services	1,736	—	1,736
Fiber Infrastructure	846	(110)	736
Voice and Other	796	—	796
Total IGAM Revenue	4,137	(375)	3,762
Large Enterprise			
Compute and Application Services	665	(82)	583
IP and Data Services	1,628	(2)	1,626
Fiber Infrastructure	601	(46)	555
Voice and Other	1,067	(2)	1,065
Total Large Enterprise Revenue	3,961	(132)	3,829
Mid-Market Enterprise			
Compute and Application Services	127	(16)	111
IP and Data Services	1,809	(6)	1,803
Fiber Infrastructure	212	(9)	203
Voice and Other	753	—	753
Total Mid-Market Enterprise Revenue	2,901	(31)	2,870
Wholesale			
Compute and Application Services	184	(161)	23
IP and Data Services	1,249	—	1,249
Fiber Infrastructure	618	(121)	497
Voice and Other	1,758	(258)	1,500
Total Wholesale Revenue	3,809	(540)	3,269
Business Segment by Product Category			
Compute and Application Services	1,735	(524)	1,211
IP and Data Services	6,422	(8)	6,414
Fiber Infrastructure	2,277	(286)	1,991
Voice and Other	4,374	(260)	4,114
Total Business Segment Revenue	14,808	(1,078)	13,730
Mass Markets Segment by Product Category			
Fiber Broadband	427	—	427
Other Broadband	2,639	(236)	2,403
Voice and Other	2,838	(601)	2,237
Total Mass Markets Revenue	5,904	(837)	5,067
Total Revenue	\$ 20,712	(1,915)	18,797
Timing of revenue			
Goods and services transferred at a point in time		\$	250
Services performed over time			18,547
Total revenue from contracts with customers		\$	18,797

(1) Includes regulatory revenue and lease revenue not within the scope of ASC 606.

Customer Receivables and Contract Balances

The following table provides balances of customer receivables, contract assets and contract liabilities, net of amounts classified as held for sale, as of December 31, 2022 and 2021:

	December 31, 2022	December 31, 2021
	(Dollars in millions)	
Customer receivables ⁽¹⁾	\$ 1,424	1,493
Contract assets ⁽²⁾	34	73
Contract liabilities ⁽³⁾	656	680

(1) Reflects gross customer receivables of \$1.5 billion and \$1.6 billion, net of allowance for credit losses of \$73 million and \$102 million, at December 31, 2022 and December 31, 2021, respectively. These amounts exclude customer receivables, net, classified as held for sale of \$76 million at December 31, 2022 (related to the EMEA business) and \$288 million at December 31, 2021 (related to both the Latin American business and the ILEC business).

(2) These amounts exclude contract assets classified as held for sale of \$16 million at December 31, 2022 (related to the EMEA business) and \$9 million at December 31, 2021 (related to both the Latin American business and the ILEC business).

(3) These amounts exclude contract liabilities classified as held for sale of \$59 million at December 31, 2022 (related to the EMEA business) and \$161 million at December 31, 2021 (related to both the Latin American business and the ILEC business).

Contract liabilities are consideration we have received from our customers or billed in advance of providing goods or services promised in the future. We defer recognizing this consideration as revenue until we have satisfied the related performance obligation to the customer. Contract liabilities include recurring services billed one month in advance and installation and maintenance charges that are deferred and recognized over the actual or expected contract term, which typically ranges from one to five years depending on the service. Contract liabilities are included within deferred revenue in our consolidated balance sheets. During the years ended December 31, 2022 and December 31, 2021, we recognized \$539 million and \$605 million, respectively, of revenue that was included in contract liabilities of \$841 million and \$950 million as of January 1, 2022 and 2021, respectively, including contract liabilities that were classified as held for sale.

Performance Obligations

As of December 31, 2022, we expect to recognize approximately \$7.4 billion of revenue in the future related to performance obligations associated with existing customer contracts that are partially or wholly unsatisfied. We expect to recognize approximately 75% of this revenue through 2025, with the balance recognized thereafter.

These amounts exclude (i) the value of unsatisfied performance obligations for contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed (for example, uncommitted usage or non-recurring charges associated with professional or technical services to be completed), (ii) contracts that are classified as leasing arrangements or government assistance that are not subject to ASC 606 and (iii) the value of unsatisfied performance obligations for contracts which relate to our planned divestiture of the EMEA business.

Contract Costs

The following tables provide changes in our contract acquisition costs and fulfillment costs:

	Year Ended December 31, 2022	
	Acquisition Costs	Fulfillment Costs
	(Dollars in millions)	
Beginning of period balance	\$ 222	186
Costs incurred	172	158
Amortization	(192)	(149)
Classified as held for sale ⁽¹⁾	—	(3)
End of period balance	\$ 202	192

	Year Ended December 31, 2021	
	Acquisition Costs	Fulfillment Costs
	(Dollars in millions)	
Beginning of period balance	\$ 289	216
Costs incurred	176	151
Amortization	(209)	(149)
Classified as held for sale ⁽²⁾	(34)	(32)
End of period balance	\$ 222	\$ 186

⁽¹⁾ Represents changes in amounts classified as held for sale related to the divestitures of our Latin American and ILEC businesses on August 1, 2022 and October 3, 2022, respectively, and \$6 million acquisition costs and no fulfillment costs classified as held for sale as of December 31, 2022 related to the planned divestiture of the EMEA business. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business.

⁽²⁾ Represents the amounts classified as held for sale related to the divestitures of our Latin American and ILEC businesses on August 1, 2022 and October 3, 2022, respectively. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business.

Acquisition costs include commission fees paid to employees as a result of obtaining contracts. Fulfillment costs include third party and internal costs associated with the provision, installation and activation of services to customers, including labor and materials consumed for these activities.

Deferred acquisition and fulfillment costs are amortized based on the transfer of services on a straight-line basis over the average contract life of approximately 32 months for mass markets customers and 30 months for business customers. Amortized fulfillment costs are included in cost of services and products and amortized acquisition costs are included in selling, general and administrative expenses in our consolidated statements of operations. The amount of these deferred costs that are anticipated to be amortized in the next 12 months are included in other current assets on our consolidated balance sheets. The amount of deferred costs expected to be amortized beyond the next twelve months is included in other non-current assets on our consolidated balance sheets. Deferred acquisition and fulfillment costs are assessed for impairment on a quarterly basis.

Governmental Funding

Lumen participates in various U.S. federal and state programs under which government support payments are received to offset costs associated with providing services in targeted locations such as unserved or underserved high-cost or rural areas, or for certain types of customers, including non-profit organizations, educational institutions and local governmental bodies. Support payments may be conditioned on specified infrastructure buildouts by milestone deadlines or provision of services at specified locations and speed requirements. Commitments may be made annually, on a multi-year basis ranging from one to ten years or be on-going subject to periodic change or termination. Consistent with customary practice and as referenced in ASC 832 *Government Assistance*, Lumen applies a grant model of accounting by which it accounts for these transactions as non-ASC 606 revenue over the periods in which the costs for which the funding is intended to compensate are incurred. This non-ASC 606 revenue is included in operating revenue in our consolidated statements of operations. Corresponding receivables are recorded when services have been provided to the customers and costs incurred, but the cash has not been received. These amounts are included in our accounts receivable, less allowance in our consolidated balance sheets. Certain programs are subject to audits of compliance with program commitments and, subject to the outcomes of those assessments, Lumen may be required to reimburse the government entity for cash previously received, or, in some cases, pay a penalty. Lumen evaluates each program and establishes a liability under the principles of ASC 450 if it is probable support payments will be recaptured or a penalty will be imposed.

For the year ended December 31, 2022, Lumen recorded non-customer revenue of \$190 million under government assistance programs, of which 31% was associated with state universal service fund support programs.

Between 2015 and 2021, we received approximately \$500 million annually through the FCC's Connect America Fund II ("CAF II"), a federal multi-year recurring subsidy program for more extensive broadband deployment in price-cap ILEC territories. For this program, which ended on December 31, 2021, we were required to meet certain specified infrastructure buildout requirements in 33 states by the end of 2021, which required substantial capital expenditures. In the first quarter of 2022, we recognized \$59 million of previously deferred revenue related to the conclusion of the CAF II program based upon our final buildout and filing submissions. The government has the right to audit our compliance with the CAF II program and the ultimate outcome of any remaining examinations is unknown, but could result in a liability to us in excess of our reserve accruals established for these matters.

In early 2020, the FCC created the Rural Digital Opportunity Fund (the "RDOF"), which is a federal support program designed to replace the CAF II program. On December 7, 2020, the FCC allocated in its RDOF Phase I auction \$9.2 billion in support payments over 10 years to deploy high speed broadband to over 5.2 million unserved locations. We won bids to receive approximately \$26 million of annual RDOF Phase I support payments approximately 36% of which is attributable to the ILEC business we divested on October 3, 2022. Our support payments under the RDOF Phase I program commenced during the second quarter of 2022.

Lumen participates in multiple state sponsored programs for broadband deployment in unserved and underserved areas for which the states have state universal service funds sourced from fees levied on telecommunications providers and passed on to consumers. During the year ending December 31, 2022, Lumen participated in these types of programs primarily in the states of Arkansas, California, Colorado, Maine, Nebraska, New Mexico, Oregon, Utah, Vermont, and Wisconsin.

(5) Leases

We primarily lease to or from third parties various office facilities, colocation facilities, equipment and transmission capacity. Leases with an initial term of 12 months or less are not recorded on our consolidated balance sheets; we recognize lease expense for these leases on a straight-line basis over the lease term.

We determine if an arrangement is a lease at inception and whether that lease meets the classification criteria of a finance or operating lease. Lease-related assets, or right-of-use assets, are recognized at the lease commencement date at amounts equal to the respective lease liabilities. Lease-related liabilities are recognized at the present value of the remaining contractual fixed lease payments, discounted using our incremental borrowing rates. As part of the present value calculation for the lease liabilities, we use an incremental borrowing rate as the rates implicit in the leases are not readily determinable. The incremental borrowing rates used for lease accounting are based on our unsecured rates, adjusted to approximate the rates at which we could borrow on a collateralized basis over a term similar to the recognized lease term. We apply the incremental borrowing rates to lease components using a portfolio approach based upon the length of the lease term and the reporting entity in which the lease resides. Operating lease expense is recognized on a straight-line basis over the lease term, while variable lease payments are expensed as incurred. Operating lease assets are included in other, net under goodwill and other assets on our consolidated balance sheets. Noncurrent operating lease liabilities are included in other under deferred credits and other liabilities on our consolidated balance sheets.

Some of our lease arrangements contain lease components, non-lease components (including common-area maintenance costs) and executory costs (including real estate taxes and insurance costs). We generally account for each component separately based on the estimated standalone price of each component. For colocation leases, we account for the lease and non-lease components as a single lease component.

Many of our lease agreements contain renewal options; however, we do not recognize right-of-use assets or lease liabilities for renewal periods unless we determine that we are reasonably certain of renewing the lease. Certain leases also include options to purchase the leased property. The depreciable life of assets and leasehold improvements are limited by the expected lease term, unless there is a transfer of title or purchase option reasonably certain to be exercised. Our lease agreements do not generally contain any material residual value guarantees or material restrictive covenants.

Lease expense consisted of the following:

	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Operating and short-term lease cost	\$ 451	535	729
Finance lease cost:			
Amortization of right-of-use assets	37	37	36
Interest on lease liability	15	16	12
Total finance lease cost	52	53	48
Total lease cost	\$ 503	588	777

We primarily lease from third parties various equipment, office facilities, retail outlets, switching facilities and other network sites or components. These leases, with few exceptions, provide for renewal options and rent escalations that are either fixed or based on the consumer price index. Any rent abatements, along with rent escalations, are included in the computation of rent expense calculated on a straight-line basis over the lease term. The lease term for most leases includes the initial non-cancelable term plus any term under renewal options that we believe are reasonably assured.

During the years ended December 31, 2021 and 2020, we rationalized our lease footprint and ceased using 23 and 16 underutilized leased property locations, respectively. We determined that we no longer needed the leased space and, due to the limited remaining term on the contracts, concluded that we had neither the intent nor ability to sublease the properties. For the years ended December 31, 2021 and 2020, we incurred accelerated lease costs of approximately \$35 million and \$41 million, respectively. We did not further rationalize our lease footprint or incur material accelerated lease costs during the year ended December 31, 2022. However, in conjunction with our plans to continue to reduce costs, we expect to continue our real estate rationalization efforts and expect to incur additional accelerated lease costs in future periods.

For the years ended December 31, 2022, 2021 and 2020, our gross rental expense, including the accelerated lease costs discussed above, was \$503 million, \$588 million and \$777 million, respectively. We also received sublease rental income of \$25 million for each of the years ended December 31, 2022, 2021 and 2020.

Supplemental consolidated balance sheet information and other information related to leases is included below:

Leases (Dollars in millions)	Classification on the Balance Sheet	As of December 31,	
		2022	2021
Assets			
Operating lease assets	Other, net	\$ 1,340	1,451
Finance lease assets	Property, plant and equipment, net of accumulated depreciation	317	314
Total leased assets		\$ 1,657	1,765
Liabilities			
Current			
Operating	Current operating lease liabilities	\$ 344	385
Finance	Current maturities of long-term debt	16	19
Noncurrent			
Operating	Other	1,088	1,171
Finance	Long-term debt	234	251
Total lease liabilities		\$ 1,682	1,826
Weighted-average remaining lease term (years)			
Operating leases		7.7	6.8
Finance leases		12.0	13.1
Weighted-average discount rate			
Operating leases		5.98 %	5.54 %
Finance leases		4.96 %	4.89 %

At December 31, 2022, we classified certain operating and finance lease assets and liabilities related to the EMEA business as held for sale and discontinued recording amortization on the related right-of-use assets upon this classification. These operating and finance lease assets and liabilities held for sale are not reflected in the above or throughout the disclosures within this note. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business for more information.

Supplemental consolidated cash flow statement information related to leases is included below:

	Years Ended December 31,	
	2022	2021
(Dollars in millions)		
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows for operating leases	\$ 462	525
Operating cash flows for finance leases	15	15
Financing cash flows for finance leases	89	52
Supplemental lease cash flow disclosures:		
Operating lease right-of-use assets obtained in exchange for new operating lease liabilities	\$ 381	165
Right-of-use assets obtained in exchange for new finance lease liabilities	94	94

As of December 31, 2022, maturities of lease liabilities were as follows:

	Operating Leases	Finance Leases
	(Dollars in millions)	
2023	\$ 416	28
2024	282	27
2025	223	28
2026	174	28
2027	130	29
Thereafter	611	194
Total lease payments	1,836	334
Less: interest	(404)	(84)
Total	1,432	250
Less: current portion	(344)	(16)
Long-term portion	\$ 1,088	234

As of December 31, 2022, we had no material operating or finance leases that had not yet commenced.

Operating Lease Income

Lumen Technologies leases various dark fiber, office facilities, colocation facilities, switching facilities, other network sites and service equipment to third parties under operating leases. Lease and sublease income are included in operating revenue in the consolidated statements of operations. See "Revenue Recognition" in Note 1—Background and Summary of Significant Accounting Policies.

For the years ended December 31, 2022, 2021 and 2020, our gross rental income was \$1.2 billion, \$1.2 billion and \$1.3 billion, respectively, which represents 7%, 6% and 6% respectively, of our operating revenue for the years ended December 31, 2022, 2021 and 2020.

(6) Credit Losses on Financial Instruments

To assess our expected credit losses on financial instruments, we aggregate financial assets with similar risk characteristics to monitor their credit quality or deterioration over the life of such assets. We periodically monitor certain risk characteristics within our aggregated financial assets and revise their composition accordingly, to the extent internal and external risk factors change. We separately evaluate financial assets that do not share risk characteristics with other financial assets. Our financial assets measured at amortized cost primarily consist of accounts receivable.

We use a loss rate method to estimate our allowance for credit losses. Our determination of the current expected credit loss rate begins with our review of historical loss experience as a percentage of accounts receivable. We measure our historical loss period based on the average days to recognize accounts receivable as credit losses. When asset specific characteristics and current conditions change from those in the historical period, due to changes in our credit and collections strategy, certain classes of aged balances, or credit loss and recovery policies, we perform a qualitative and quantitative assessment to adjust our historical loss rate. We use regression analysis to develop an expected loss rate using historical experience and economic data over a forecast period. We measure our forecast period based on the average days to collect payment on billed accounts receivable. To determine our current allowance for credit losses, we combine the historical and expected credit loss rates and apply them to our period end accounts receivable.

If there is an unexpected deterioration of a customer's financial condition or an unexpected change in economic conditions, including macroeconomic events, we assess the need to adjust the allowance for credit losses. Any such resulting adjustments would affect earnings in the period that adjustments are made.

The assessment of the correlation between historical observed default rates, current conditions and forecasted economic conditions requires judgment. Alternative interpretations of these factors could have resulted in different conclusions regarding our allowance for credit losses. The amount of credit loss is sensitive to changes in circumstances and forecasted economic conditions. Our historical credit loss experience, current conditions and forecast of economic conditions may also not be representative of the customers' actual default experience in the future, and we may use methodologies that differ from those used by other companies.

The following table presents the activity of our allowance for credit losses by accounts receivable portfolio for the years ended December 31, 2022 and December 31, 2021:

	Business	Mass Markets	Total
	(Dollars in millions)		
Balance at January 1, 2021 ⁽¹⁾	\$ 109	82	191
Provision for expected losses	50	55	105
Write-offs charged against the allowance	(76)	(101)	(177)
Recoveries collected	13	6	19
Classified as assets held for sale ⁽²⁾	(8)	(16)	(24)
Balance at December 31, 2021	\$ 88	26	114
Provision for expected losses	25	108	133
Write-offs charged against the allowance	(61)	(114)	(175)
Recoveries collected	10	6	16
Change in allowance in assets held for sale ⁽³⁾	(5)	2	(3)
Balance at December 31, 2022	\$ 57	28	85

(1) We completed an internal reorganization in January 2021. As a result of this change, the allowance for credit losses previously included in the Consumer and Business portfolio of \$70 million related to consumer and \$12 million related to our small business group, respectively, were reclassified to the Mass Markets allowance for credit losses on January 1, 2021.

(2) Represents the amounts classified as held for sale related to the divestitures of our Latin American and ILEC businesses on August 1, 2022 and October 3, 2022, respectively. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business.

(3) Represents changes in amounts classified as held for sale related to the divestitures of our Latin American and ILEC businesses on August 1, 2022 and October 3, 2022, respectively, and the inclusion of a \$5 million allowance for credit losses classified as held for sale as of December 31, 2022 related to the planned divestiture of the EMEA business. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business.

For the year ended December 31, 2022, we decreased our allowance for credit losses for our business and mass markets accounts receivable portfolios primarily due to releasing COVID-19 related reserves during 2022.

For the year ended December 31, 2021, we decreased our allowance for credit losses for our business and mass markets accounts receivable portfolios primarily due to higher write-off activity during 2021, along with the easing of prior delays due to COVID-19 related restrictions from 2020 and lower receivable balances.

(7) Long-Term Debt and Credit Facilities

The following table reflects the consolidated long-term debt of Lumen Technologies, Inc. and its subsidiaries as of the dates indicated below, including unamortized discounts and premiums and unamortized debt issuance costs:

	Interest Rates ⁽¹⁾	Maturities ⁽¹⁾	As of December 31,	
			2022	2021
(Dollars in millions)				
Senior Secured Debt: ⁽²⁾				
<i>Lumen Technologies, Inc.</i>				
Revolving Credit Facility ⁽³⁾	LIBOR + 2.00%	2025	\$ —	200
Term Loan A ⁽⁴⁾	LIBOR + 2.00%	2025	991	1,050
Term Loan A-1 ⁽⁴⁾	LIBOR + 2.00%	2025	283	300
Term Loan B ⁽⁵⁾	LIBOR + 2.25%	2027	3,941	4,900
Senior notes	4.000%	2027	1,250	1,250
<i>Subsidiaries:</i>				
<i>Level 3 Financing, Inc.</i>				
Tranche B 2027 Term Loan ⁽⁶⁾	LIBOR + 1.75%	2027	2,411	3,111
Senior notes	3.400% - 3.875%	2027 - 2029	1,500	1,500
<i>Embarq Corporation subsidiaries</i>				
First mortgage bonds	N/A	N/A	—	138
Senior Notes and Other Debt: ⁽⁷⁾				
<i>Lumen Technologies, Inc.</i>				
Senior notes	4.500% - 7.650%	2023 - 2042	3,722	8,414
<i>Subsidiaries:</i>				
<i>Level 3 Financing, Inc.</i>				
Senior notes	3.625% - 4.625%	2027 - 2029	3,940	5,515
<i>Qwest Corporation</i>				
Senior notes	6.500% - 7.750%	2025 - 2057	1,986	1,986
Term loan ⁽⁸⁾	LIBOR + 2.25%	2027	215	215
<i>Qwest Capital Funding, Inc.</i>				
Senior notes	6.875% - 7.750%	2028 - 2031	192	255
Finance lease and other obligations ⁽⁹⁾	Various	Various	317	347
Unamortized (discounts) premiums, net			(7)	21
Unamortized debt issuance costs			(169)	(220)
Total long-term debt			20,572	28,982
Less current maturities			(154)	(1,554)
Long-term debt, excluding current maturities			\$ 20,418	27,428

(1) As of December 31, 2022.

(2) See the remainder of this Note for a description of certain parent or subsidiary guarantees and liens securing this debt.

(3) The Revolving Credit Facility had an interest rate of 2.103% as of December 31, 2021.

(4) Term Loans A and A-1 had interest rates of 6.384% and 2.104% as of December 31, 2022 and December 31, 2021, respectively.

- (5) Term Loan B had interest rates of 6.634% and 2.354% as of December 31, 2022 and December 31, 2021, respectively.
- (6) The Level 3 Tranche B 2027 Term Loan had interest rates of 6.134% and 1.854% as of December 31, 2022 and December 31, 2021, respectively.
- (7) The table excludes \$1.4 billion of indebtedness under Embarq Corporation's 7.995% senior notes maturing in 2036 that was classified as held for sale as of December 31, 2021 and was transferred as of October 3, 2022 concurrent with the sale of the ILEC business. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business.
- (8) The Qwest Corporation Term Loan had interest rates of 6.640% and 2.110% as of December 31, 2022 and December 31, 2021, respectively.
- (9) The table excludes finance lease obligations that were classified as held for sale as of December 31, 2022 and December 31, 2021. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business.

Long-Term Debt Maturities

Set forth below is the aggregate principal amount of our long-term debt as of December 31, 2022 (excluding unamortized (discounts) premiums, net, and unamortized debt issuance costs) maturing during the following years. As a result of classifying our EMEA business as held for sale on our December 31, 2022 consolidated balance sheet, the amounts presented below do not include maturities of the finance lease obligations of that business. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business.

	(Dollars in millions)	
2023	\$	154
2024		158
2025		1,743
2026		806
2027		9,387
2028 and thereafter		8,500
Total long-term debt	\$	<u>20,748</u>

Debt of Lumen Technologies, Inc. and its Subsidiaries

At December 31, 2022, most of our outstanding consolidated debt had been incurred by Lumen Technologies, Inc. or one of the following three other primary borrowers or "borrowing groups," each of which has borrowed funds either on a standalone basis or as part of a separate restricted group with certain of its subsidiaries:

- Level 3 Financing, Inc., including its parent guarantor Level 3 Parent, LLC, and one or more subsidiary guarantors;
- Qwest Corporation; and
- Qwest Capital Funding, Inc., including its parent guarantor, Qwest Communications International Inc.

Each of these borrowers or borrowing groups has entered into one or more credit agreements with certain financial institutions or other institutional lenders, or issued senior notes. Certain of these debt instruments are described further below.

Amended and Restated Credit Agreement

On January 31, 2020, we amended and restated our credit agreement dated June 19, 2017 (as so amended and restated, the "Amended Credit Agreement"). At December 31, 2022, the Amended Credit Agreement consisted of the following facilities:

- a \$2.2 billion senior secured revolving credit facility ("the Revolving Credit Facility");
- a \$991 million senior secured Term Loan A credit facility;
- a \$283 million senior secured Term Loan A-1 credit facility with CoBank, ACB; and
- a \$3.9 billion senior secured Term Loan B credit facility (the term loan facilities and the Revolving Credit Facility being referred to collectively as the "Amended Secured Credit Facilities").

Loans under the Term Loan A and A-1 facilities and the Revolving Credit Facility bear interest at a rate equal to, at our option, the Eurodollar rate or the alternative base rate (each as defined in the Amended Credit Agreement) plus an applicable margin between 1.50% to 2.25% per annum for Eurodollar loans and 0.50% to 1.25% per annum for alternative base rate loans, depending on our then current total leverage ratio. Loans under the Term Loan B facility bear interest at the Eurodollar rate plus 2.25% per annum or the alternative base rate plus 1.25% per annum. Loans under each of the term loan facilities require certain specified quarterly amortization payments and certain specified mandatory prepayments in connection with certain asset sales and debt issuances and out of excess cash flow, among other things, subject in each case to certain significant exceptions.

Borrowings under the Revolving Credit Facility and the Term Loan A and A-1 facilities mature on January 31, 2025. Borrowings under the Term Loan B facility mature on March 15, 2027.

All of Lumen's obligations under the Amended Secured Credit Facilities are guaranteed by certain of its subsidiaries. The guarantees by certain of those guarantors are secured by a first priority security interest in substantially all assets (including certain subsidiaries stock) directly owned by them, subject to certain exceptions and limitations.

A portion of the Revolving Credit Facility in an amount not to exceed \$250 million is available for swingline loans, and a portion in an amount not to exceed \$800 million is available for the issuance of letters of credit.

Lumen Technologies is permitted under the Amended Credit Agreement to request certain incremental borrowings subject to the satisfaction of various conditions and to certain other limitations. Any incremental borrowings would be subject to the same terms and conditions under the Amended Credit Agreement.

Term Loans and Certain Other Debt of Subsidiaries

Qwest Corporation

On October 23, 2020, Qwest Corporation borrowed \$215 million under a variable-rate term loan with CoBank ACB. The outstanding unpaid principal amount of this term loan plus any accrued and unpaid interest is due on October 23, 2027. Interest is paid at least quarterly based upon either the London Interbank Offered Rate ("LIBOR") or the base rate (as defined in the credit agreement) plus an applicable margin between 1.50% to 2.50% per annum for LIBOR loans and 0.50% to 1.50% per annum for base rate loans depending on Qwest Corporation's then current senior unsecured long-term debt rating.

Level 3 Financing, Inc.

At December 31, 2022, Level 3 Financing, Inc. owed \$2.4 billion under a senior secured Tranche B 2027 Term Loan, which matures on March 1, 2027. The Tranche B 2027 Term Loan carries an interest rate, in the case of base rate borrowings, equal to (i) the greater of the Prime Rate, the Federal Funds Effective Rate plus 50 basis points, or LIBOR plus 100 basis points (with all such terms and calculations as defined or further specified in the credit agreement) plus (ii) 0.75% per annum. Any Eurodollar borrowings under the Tranche B 2027 Term Loan bear interest at LIBOR plus 1.75% per annum.

The Tranche B 2027 Term Loan requires certain specified mandatory prepayments in connection with certain asset sales and other transactions, subject to certain significant exceptions. The obligations of Level 3 Financing, Inc. under the Tranche B 2027 Term Loan are, subject to certain exceptions, secured by certain assets of Level 3 Parent, LLC and certain of its material domestic telecommunication subsidiaries. Also, Level 3 Parent, LLC and certain of its subsidiaries have guaranteed the obligations of Level 3 Financing, Inc. under the Tranche B 2027 Term Loan.

Revolving Letters of Credit

We use various financial instruments in the normal course of business. These instruments include letters of credit, which are conditional commitments issued on our behalf in accordance with specified terms and conditions. Lumen Technologies maintains an uncommitted \$225 million revolving letter of credit facility separate from the letter of credit facility included in the Revolving Credit Facility noted above. Letters of credit issued under this uncommitted facility are backed by credit enhancements in the form of secured guarantees issued by certain of our subsidiaries. As of December 31, 2022 and 2021, we had (i) \$94 million and \$88 million, respectively, of letters of credit outstanding under our committed facility and various other facilities and (ii) no letters of credit outstanding under our Revolving Credit Facility.

Senior Notes

Lumen's consolidated indebtedness at December 31, 2022 included (i) senior secured notes issued by Lumen Technologies, Inc. and Level 3 Financing, Inc. and (ii) senior unsecured notes issued by Lumen Technologies, Inc., Level 3 Financing, Inc., Qwest Corporation, and Qwest Capital Funding, Inc. All of these notes carry fixed interest rates and all principal is due on the notes' respective maturity dates, which rates and maturity dates are summarized in the table above. The Lumen Technologies, Inc. secured senior notes are guaranteed by the same domestic subsidiaries that guarantee the Amended Credit Agreement on substantially the same terms and conditions that govern the guarantees of the Amended Credit Agreement. The Level 3 Financing, Inc. secured senior notes are secured by a pledge of substantially all of its assets and guaranteed on a secured basis by the same domestic subsidiaries that guarantee its Term B 2027 Term Loan. The remaining senior notes issued by Level 3 Financing, Inc. are guaranteed on an unsecured basis by its parent, Level 3 Parent, LLC, and one of its subsidiaries. The senior notes issued by Qwest Capital Funding, Inc. are guaranteed by its parent, Qwest Communications International Inc. Except for a limited number of senior notes issued by Qwest Corporation, the issuer generally can redeem the notes, at its option, in whole or in part, (i) pursuant to a fixed schedule of pre-established redemption prices, (ii) pursuant to a "make whole" redemption price or (iii) under certain other specified limited conditions. Under certain circumstances in connection with a "change of control" of Lumen Technologies, it will be required to make an offer to repurchase each series of these senior notes (other than two of its older series of notes) at a price of 101% of the principal amount redeemed, plus accrued and unpaid interest. Also, under certain circumstances in connection with a "change of control" of Level 3 Parent, LLC or Level 3 Financing, Inc., Level 3 Financing will be required to make an offer to repurchase each series of its outstanding senior notes at a price of 101% of the principal amount redeemed, plus accrued and unpaid interest.

Borrowings and Repayments

2022

During 2022, Lumen borrowed \$2.4 billion from, and made repayments of \$2.6 billion to, its Revolving Credit Facility. We used our net revolving credit draws and available cash to repay the following aggregate principal amounts of indebtedness through a combination of tender offers, redemptions, prepayments, amortization payments and payments at maturity. These transactions resulted in a net gain on the extinguishment of debt of \$214 million.

Debt	Period of Repayment	(Dollars in millions)
<i>Lumen Technologies, Inc.</i>		
5.800% Senior Notes due 2022 (at maturity)	Q1 2022	\$ 1,400
6.750% Senior Notes, Series W, due 2023	Q4 2022	750
7.500% Senior Notes, Series Y, due 2024	Q4 2022	982
7.500% Senior Notes, Series Y, due 2024	Q3 2022	18
5.625% Senior Notes, Series X, due 2025	Q4 2022	286
7.200% Senior Notes, Series D, due 2025	Q4 2022	34
5.125% Senior Notes due 2026	Q4 2022	520
5.125% Senior Notes due 2026	Q3 2022	11
6.875% Debentures, Series G, due 2028	Q4 2022	130
5.375% Senior Notes due 2029	Q4 2022	494
Term Loan B prepayment	Q4 2022	909
Scheduled term loan payments	Multiple	125
<i>Level 3 Financing, Inc.</i>		
Tranche B 2027 Term Loan	Q3 2022	700
5.375% Senior Notes due 2025	Q3 2022	800
5.250% Senior Notes due 2026	Q3 2022	775
<i>Embarq Corporation Subsidiaries</i>		
First Mortgage Bonds	Q4 2022	137
<i>Qwest Capital Funding, Inc.</i>		
Senior Notes	Q4 2022	63
Other	Q4 2022	68
Total Debt Repayments		\$ 8,202

2021

During 2021, Lumen borrowed \$400 million from, and made repayments of \$350 million to, its Revolving Credit Facility. We also used available cash (including funds from the debt issuances mentioned below) to repay the following aggregate principal amounts of indebtedness through a combination of redemptions, prepayments, amortization payments and payments at maturity. These transactions resulted in a net gain on the extinguishment of debt of \$8 million.

Debt	Period of Repayment	(Dollars in millions)
<i>Lumen Technologies, Inc.</i>		
6.450% Senior Notes, Series S, due 2021 (at maturity)	Q2 2021	\$ 1,231
Scheduled term loan payments	Multiple	125
<i>Level 3 Financing, Inc.</i>		
5.375% Senior Notes due 2024	Q1 2021	900
<i>Qwest Corporation, Inc.</i>		
6.750% Senior Notes (at maturity)	Q4 2021	950
7.000% Senior Notes due 2056	Q1 2021	235
<i>Qwest Capital Funding, Inc.</i>		
Senior Notes (at maturity)	Q3 2021	97
Total Debt Repayments		\$ 3,538

On June 15, 2021, Lumen Technologies, Inc. issued \$1.0 billion aggregate principal amount of 5.375% Senior Notes due 2029. The net proceeds were used, together with cash on hand, to repay at maturity our outstanding \$1.2 billion 6.450% Senior Notes, Series S, due 2021, shown in the table above.

On January 13, 2021, Level 3 Financing, Inc. issued \$900 million aggregate principal amount of 3.750% Sustainability-Linked Senior Notes due 2029 (the "Sustainability-Linked Notes"). The net proceeds were used, together with cash on hand, to redeem \$900 million of our outstanding senior note indebtedness, shown in the table above. The Sustainability-Linked Notes are guaranteed by Level 3 Parent, LLC and Level 3 Communications, LLC.

Interest Expense

Interest expense includes interest on total long-term debt. The following table presents the amount of gross interest expense, net of capitalized interest:

	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Interest expense:			
Gross interest expense	\$ 1,398	1,575	1,743
Capitalized interest	(66)	(53)	(75)
Total interest expense	\$ 1,332	1,522	1,668

Covenants

Lumen Technologies, Inc.

With respect to the Term Loan A and A-1 facilities and the Revolving Credit Facility, the Amended Credit Agreement requires us to maintain (i) a maximum total leverage ratio of not more than 4.75 to 1.00 and (ii) a minimum consolidated interest coverage ratio of at least 2.00 to 1.00, with such ratios being determined and calculated in the manner described in the Amended Credit Agreement.

The Amended Secured Credit Facilities contain various representations and warranties and extensive affirmative and negative covenants. Such covenants include, among other things and subject to certain significant exceptions, restrictions on our ability to declare or pay dividends, repurchase stock, repay certain other indebtedness, create liens, incur additional indebtedness, make investments, engage in transactions with our affiliates, dispose of assets and merge or consolidate with any other person.

The senior unsecured notes of Lumen Technologies, Inc. were issued under four separate indentures. These indentures restrict our ability to (i) incur, issue or create liens upon the property of Lumen Technologies, Inc. and (ii) consolidate with or merge into, or transfer or lease all or substantially all of our assets to any other party. These indentures do not contain any provisions that restrict the incurrence of additional indebtedness. The senior secured notes of Lumen Technologies, Inc. were issued under a separate indenture that contains a more restrictive set of covenants. As indicated above under "Senior Notes", Lumen Technologies, Inc. will be required to offer to purchase certain of its long-term debt securities issued under its indentures under certain circumstances in connection with a "change of control" of Lumen Technologies, Inc.

Level 3 Companies

The term loan, senior secured notes and senior unsecured notes of Level 3 Financing, Inc. contain various representations and extensive affirmative and negative covenants. Such covenants include, among other things and subject to certain significant exceptions, restrictions on their ability to declare or pay dividends, repay certain other indebtedness, create liens, incur additional indebtedness, make investments, dispose of assets and merge or consolidate with any other person. Also, as indicated above under "Senior Notes", Level 3 Financing, Inc. will be required to offer to repurchase or repay certain of its long-term debt under certain circumstances in connection with a "change of control" of Level 3 Financing or Level 3 Parent, LLC.

Qwest Companies

Under its term loan, Qwest Corporation must maintain a debt to EBITDA ratio of not more than 2.85 to 1.00, as determined and calculated in the manner described in the applicable term loan documentation. The term loan also contains a negative pledge covenant, which generally requires Qwest Corporation to secure equally and ratably any advances under the term loan if it pledges assets or permits liens on its property for the benefit of other debtholders.

The senior notes of Qwest Corporation were issued under indentures dated April 15, 1990 and October 15, 1999. These indentures contain restrictions on the incurrence of liens and the consummation of certain transactions substantially similar to the above-described covenants in Lumen's indentures (but contain no mandatory repurchase provisions). The senior notes of Qwest Capital Funding, Inc. were issued under an indenture dated June 29, 1998 containing terms substantially similar to those set forth in Qwest Corporation's indentures.

Impact of Covenants

The debt covenants applicable to Lumen Technologies, Inc. and its subsidiaries could have a material adverse impact on their ability to operate or expand their respective businesses, to pursue strategic transactions, or to otherwise pursue their plans and strategies. The covenants of the Level 3 companies may significantly restrict the ability of Lumen Technologies, Inc. to receive cash from the Level 3 companies, to distribute cash from the Level 3 companies to other of Lumen's affiliated entities, or to enter into other transactions among Lumen's wholly-owned entities.

Certain of the debt instruments of Lumen Technologies, Inc. and its subsidiaries contain cross payment default or cross acceleration provisions. When present, these provisions could have a wider impact on liquidity than might otherwise arise from a default or acceleration of a single debt instrument.

The ability of Lumen Technologies, Inc. and its subsidiaries to comply with the financial covenants in their respective debt instruments could be adversely impacted by a wide variety of events, including unforeseen contingencies, many of which are beyond their control.

Compliance

As of December 31, 2022, Lumen Technologies, Inc. believes it and its subsidiaries were in compliance with the provisions and financial covenants in their respective material debt agreements in all material respects.

Guarantees

Lumen Technologies does not guarantee the debt of any unaffiliated parties, but, as noted above, as of December 31, 2022 certain of its largest subsidiaries guaranteed (i) its debt outstanding under its Amended Secured Credit Facilities, its senior secured notes and its \$225 million letter of credit facility and (ii) the outstanding term loans or senior notes issued by certain other subsidiaries. As further noted above, several of the subsidiaries guaranteeing these obligations have pledged substantially all of their assets to secure certain of their respective guarantees.

(8) Accounts Receivable

The following table presents details of our accounts receivable balances:

	As of December 31,	
	2022	2021
	(Dollars in millions)	
Trade and purchased receivables	\$ 1,288	1,281
Earned and unbilled receivables	209	315
Other	65	62
Total accounts receivable	1,562	1,658
Less: allowance for credit losses	(85)	(114)
Accounts receivable, less allowance	\$ 1,477	1,544

We are exposed to concentrations of credit risk from our customers. We generally do not require collateral to secure our receivable balances. We have agreements with other communications service providers whereby we agree to bill and collect on their behalf for services rendered by those providers to our customers within our local service area. We purchase accounts receivable from other communications service providers primarily on a recourse basis and include these amounts in our accounts receivable balance. We have not experienced any significant loss associated with these purchased receivables.

The following table presents details of our allowance for credit losses accounts:

	Beginning Balance	Additions	Deductions	Ending Balance
	(Dollars in millions)			
2022	\$ 114	133	(162)	85
2021	191	105	(182)	114
2020 ⁽¹⁾	106	189	(104)	191

⁽¹⁾ On January 1, 2020, we adopted ASU 2016-13 "Measurement of Credit Losses on Financial Instruments" and recognized a cumulative adjustment to our accumulated deficit as of the date of adoption of \$9 million, net of a \$2 million tax effect. This adjustment is included within "Deductions." See Note 6—Credit Losses on Financial Instruments for more information.

(9) Property, Plant and Equipment

Net property, plant and equipment is composed of the following:

	Depreciable Lives	As of December 31,	
		2022 ⁽⁵⁾	2021 ⁽⁵⁾
(Dollars in millions)			
Land	N/A	\$ 651	751
Fiber, conduit and other outside plant ⁽¹⁾	15-45 years	14,451	15,366
Central office and other network electronics ⁽²⁾	3-10 years	15,077	15,394
Support assets ⁽³⁾	3-30 years	6,863	7,181
Construction in progress ⁽⁴⁾	N/A	2,010	1,474
Gross property, plant and equipment		39,052	40,166
Accumulated depreciation		(19,886)	(19,271)
Net property, plant and equipment		\$ 19,166	20,895

⁽¹⁾ Fiber, conduit and other outside plant consists of fiber and metallic cable, conduit, poles and other supporting structures.

⁽²⁾ Central office and other network electronics consists of circuit and packet switches, routers, transmission electronics and electronics providing service to customers.

⁽³⁾ Support assets consist of buildings, cable landing stations, data centers, computers and other administrative and support equipment.

⁽⁴⁾ Construction in progress includes inventory held for construction and property of the aforementioned categories that has not been placed in service as it is still under construction.

⁽⁵⁾ These values exclude assets classified as held for sale.

At December 31, 2022, we classified \$1.9 billion of certain property, plant and equipment, net related to our EMEA business as held for sale and discontinued recording depreciation on this disposal group as of November 2, 2022. At December 31, 2021, we had \$5.1 billion of certain property, plant and equipment, net related to our Latin American and ILEC businesses sold on August 1, 2022 and October 3, 2022, respectively, classified as held for sale and discontinued recording depreciation on these disposal groups during their classification as assets held for sale. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business for more information.

We recorded depreciation expense of \$2.1 billion, \$2.7 billion and \$3.0 billion for the years ended December 31, 2022, 2021 and 2020, respectively.

Asset Retirement Obligations

As of December 31, 2022 and 2021, our asset retirement obligations balance was primarily related to estimated future costs of removing equipment from leased properties and estimated future costs of properly disposing of asbestos and other hazardous materials upon remodeling or demolishing buildings. Asset retirement obligations are included in other long-term liabilities on our consolidated balance sheets.

Our fair value estimates were determined using the discounted cash flow method.

The following table provides asset retirement obligation activity:

	Years Ended December 31,	
	2022	2021
	(Dollars in millions)	
Balance at beginning of year	\$ 182	199
Accretion expense	10	10
Liabilities settled	(10)	(13)
Change in estimate	4	(2)
Classified as held for sale ⁽¹⁾	(30)	(12)
Balance at end of year	<u>\$ 156</u>	<u>182</u>

⁽¹⁾ Represents the amounts classified as held for sale related to our divestitures. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business.

The changes in estimate referred to in the table above were offset against gross property, plant and equipment.

(10) Severance

Periodically, we reduce our workforce and accrue liabilities for the related severance costs. These workforce reductions result primarily from the progression or completion of our post-acquisition integration plans, increased competitive pressures, cost reduction initiatives, process improvements through automation and reduced workloads due to reduced demand for certain services.

We report severance liabilities within accrued expenses and other liabilities - salaries and benefits in our consolidated balance sheets and report severance expenses in selling, general and administrative expenses in our consolidated statements of operations. As described in Note 17—Segment Information, we do not allocate these severance expenses to our segments.

Changes in our accrued liabilities for severance expenses were as follows:

	Severance	
	(Dollars in millions)	
Balance at December 31, 2020	\$ 103	103
Accrued to expense		3
Payments, net		(70)
Balance at December 31, 2021		36
Accrued to expense		12
Payments, net		(37)
Balance at December 31, 2022	<u>\$ 11</u>	<u>11</u>

(11) Employee Benefits

Pension, Post-Retirement and Other Post-Employment Benefits

We sponsor various defined benefit pension plans (qualified and non-qualified) which, in the aggregate, cover a substantial portion of our employees. Pension benefits for participants of the Lumen Combined Pension Plan ("Combined Pension Plan") and, through the October 3, 2022 sale of the ILEC business, the Lumen Pension Plan, who are represented by a collective bargaining agreement are based on negotiated schedules. All other participants' pension benefits are based on each individual participant's years of service and compensation. We also maintain non-qualified pension plans for certain current and former highly compensated employees. We maintain post-retirement benefit plans that provide health care and life insurance benefits for certain eligible retirees. We also provide other post-employment benefits for certain eligible former employees. We use a December 31 measurement date for all our plans.

On October 19, 2021, we, as sponsor of the Combined Pension Plan, along with the Plan's independent fiduciary, entered into an agreement committing the Plan to use a portion of its plan assets to purchase an annuity from an insurance company (the "Insurer") to transfer approximately \$1.4 billion of the Plan's pension liabilities. This agreement irrevocably transferred to the Insurer future Plan benefit obligations for approximately 22,600 U.S. Lumen participants ("Transferred Participants") effective on December 31, 2021. This annuity transaction was funded entirely by existing Plan assets. The Insurer assumed responsibility for administrative and customer service support, including distribution of payments to the Transferred Participants. Transferred Participants' benefits were not reduced as a result of this transaction.

As of January 1, 2022, we spun off the Lumen Pension Plan from the Lumen Combined Pension Plan in anticipation of the sale of the ILEC business, as described further in Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business. At the time of the spin-off, the Lumen Pension Plan covered approximately 2,500 active plan participants along with 19,000 other participants. At the time of the spin-off, the Lumen Pension Plan had a pension benefit obligation of \$2.5 billion and assets of \$2.2 billion. In addition, the December 31, 2021 actuarial (loss) gain and prior service cost included in accumulated other comprehensive loss was allocated between the Lumen Pension Plan and the Lumen Combined Pension Plan. Following a revaluation of the pension obligation and pension assets for the Lumen Pension Plan, in preparation for the closing of the sale of the ILEC business, we contributed approximately \$319 million of Lumen's cash to the Lumen Pension Plan trust to fully fund the pension plan in September 2022. The amounts allocated to the Lumen Pension Plan were subject to adjustment up to the closing of the sale of the ILEC business on October 3, 2022, at which time the plan was transferred along with the rest of the assets and liabilities of the ILEC business. We recognized pension costs related to both plans through the sale of the ILEC business, at which time balances related to the Lumen Pension Plan were reflected in the calculation of our gain on the sale of the business.

Pension Benefits

United States funding laws require a company with a pension shortfall to fund the annual cost of benefits earned in addition to a seven-year amortization of the shortfall. Our funding policy for our Combined Pension Plan is to make contributions with the objective of accumulating ample assets to pay all qualified pension benefits when due under the terms of the plan. The accounting unfunded status of the Combined Pension Plan was \$580 million and \$1.1 billion as of December 31, 2022 and 2021, respectively.

We made no voluntary cash contributions to the Combined Pension Plan in 2022 or 2021. As discussed above, we contributed approximately \$319 million of cash to the Lumen Pension Plan trust to fully fund the pension plan in September 2022 in preparation for the closing of the sale of the ILEC business. We paid \$5 million of benefits directly to participants of our non-qualified pension plans in both 2022 and 2021.

Benefits paid by the Combined Pension Plan are paid through a trust that holds all of the Plan's assets. The amount of required contributions to the Combined Pension Plan in 2023 and beyond will depend on a variety of factors, most of which are beyond our control, including earnings on plan investments, prevailing interest rates, demographic experience, changes in plan benefits and changes in funding laws and regulations. Based on current laws and circumstances, we do not believe we are required to make any contributions to the Combined Pension Plan in 2023 and we do not expect to make voluntary contributions to the trust for the Combined Pension Plan in 2023. We estimate that in 2023 we will pay \$5 million of benefits directly to participants of our non-qualified pension plans.

We recognize in our consolidated balance sheets the funded status of the legacy Level 3 defined benefit post-retirement plans. These plans were fully funded as of December 31, 2022. The net unfunded status of these plans was \$17 million, as of December 31, 2021. Additionally, as previously mentioned, we sponsor unfunded non-qualified pension plans for certain current and former highly-compensated employees. The net unfunded status of our non-qualified pension plans was \$35 million and \$46 million for the years ended December 31, 2022 and 2021, respectively. Due to the insignificant impact of these pension plans on our consolidated financial statements, we have predominantly excluded them from the remaining employee benefit disclosures in this Note, unless otherwise specifically stated.

Post-Retirement Benefits

Our post-retirement benefit plans provide post-retirement benefits to qualified retirees and allow (i) eligible employees retiring before certain dates to receive benefits at no or reduced cost and (ii) eligible employees retiring after certain dates to receive benefits on a shared cost basis. The post-retirement benefits not paid by the trusts are funded by us and we expect to continue funding these post-retirement obligations as benefits are paid. The accounting unfunded status of our qualified post-retirement benefit plan was \$2.0 billion and \$2.8 billion as of December 31, 2022 and 2021, respectively.

Assets in the post-retirement trusts were substantially depleted as of December 31, 2016; as of December 31, 2019 the Company ceased to pay certain post-retirement benefits through the trusts. No contributions were made to the post-retirement trusts in 2022 nor 2021. Benefits are paid directly by us with available cash. In 2022, we paid \$210 million of post-retirement benefits, net of participant contributions and direct subsidies. In 2023, we currently expect to pay directly \$210 million of post-retirement benefits, net of participant contributions and direct subsidies.

We expect our expected health care cost trend to range from 5.00% to 7.20% in 2023 and grading to 4.50% by 2030. Our post-retirement benefit cost, for certain eligible legacy Qwest retirees and certain eligible legacy CenturyLink retirees, is capped at a set dollar amount. Therefore, those health care benefit obligations are not subject to increasing health care trends after the effective date of the caps.

Expected Cash Flows

The Combined Pension Plan payments, post-retirement health care benefit payments and premiums, and life insurance premium payments are either distributed from plan assets or paid by us. The estimated benefit payments provided below are based on actuarial assumptions using the demographics of the employee and retiree populations and have been reduced by estimated participant contributions.

	Combined Pension Plan	Post-Retirement Benefit Plans	Medicare Part D Subsidy Receipts
	(Dollars in millions)		
Estimated future benefit payments:			
2023	\$ 566	213	(3)
2024	514	205	(3)
2025	500	198	(2)
2026	482	191	(2)
2027	463	184	(2)
2028 - 2032	2,065	805	(7)

Net Periodic Benefit Expense (Income)

We utilize a full yield curve approach in connection with estimating the service and interest components of net periodic benefit expense by applying the specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flow.

The actuarial assumptions used to compute the net periodic benefit expense for our Combined Pension Plan and post-retirement benefit plans are based upon information available as of the beginning of the year, as presented in the following table.

	Combined Pension Plan			Post-Retirement Benefit Plans		
	2022	2021	2020	2022	2021	2020
Actuarial assumptions at beginning of year:						
Discount rate	2.29% - 3.12%	1.70% - 2.88%	2.79% - 3.55%	2.19% - 5.78%	1.58% - 2.60%	1.69% - 3.35%
Rate of compensation increase	3.25 %	3.25 %	3.25 %	N/A	N/A	N/A
Expected long-term rate of return on plan assets ⁽¹⁾	5.50 %	5.50 %	6.50 %	4.00 %	4.00 %	4.00 %
Initial health care cost trend rate	N/A	N/A	N/A	5.00% / 5.75%	6.25% / 5.00%	6.50% / 5.00%
Ultimate health care cost trend rate	N/A	N/A	N/A	4.50 %	4.50 %	4.50 %
Year ultimate trend rate is reached	N/A	N/A	N/A	2025	2025	2025

N/A - Not applicable

⁽¹⁾ Rates are presented net of projected fees and administrative costs.

Prior to the sale of the ILEC business on October 3, 2022, we realized pension costs related to the Lumen Pension Plan. Net periodic benefit expense (income) for our Combined Pension Plan and the Lumen Pension Plan (together the "Pension Plans") includes the following components:

	Pension Plans		
	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Service cost	\$ 44	56	59
Interest cost	194	201	324
Expected return on plan assets	(385)	(535)	(593)
Settlement charges	—	383	—
Realized to gain on sale of businesses	546	—	—
Special termination benefits charge	—	6	13
Recognition of prior service credit	(10)	(9)	(9)
Recognition of actuarial loss	122	184	202
Net periodic pension expense (income)	\$ 511	286	(4)

Net periodic benefit expense for our post-retirement benefit plans includes the following components:

	Post-Retirement Plans		
	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Service cost	\$ 10	14	14
Interest cost	72	47	69
Expected return on plan assets	—	—	(1)
Realized to gain on sale of businesses	(32)	—	—
Recognition of prior service cost	8	15	16
Recognition of actuarial loss	(4)	4	—
Curtailement loss	—	—	8
Net periodic post-retirement benefit expense	<u>\$ 54</u>	<u>80</u>	<u>106</u>

Service costs for our Combined Pension Plan and post-retirement benefit plans are included in the cost of services and products and selling, general and administrative line items on our consolidated statements of operations and all other costs listed above, except for amounts realized as part of the net gain on sale of businesses, are included in other income (expense), net on our consolidated statements of operations for the years ended December 31, 2022, 2021 and 2020. Additionally, a portion of the service cost is also allocated to certain assets under construction, which are capitalized and reflected as part of property, plant and equipment in our consolidated balance sheets. As a result of ongoing efforts to reduce our workforce, we recognized one-time charges in 2021 of \$6 million and in 2020 of \$21 million for curtailment and special termination benefit enhancements paid to certain eligible employees upon voluntary retirement.

Our pension plan contains provisions that allow us, from time to time, to offer lump sum payment options to certain former employees in settlement of their future retirement benefits. We record an accounting settlement charge, consisting of the recognition of certain deferred costs of the pension plan associated with these lump sum payments only if, in the aggregate, they exceed or are probable to exceed the sum of the annual service and interest costs for the plan's net periodic pension benefit cost, which represents the settlement accounting threshold. The lump sum pension settlement payments for 2021 exceeded the settlement threshold. In addition, during the fourth quarter of 2021, we executed an annuity purchase contract with a third party insurer that triggered additional settlement activity (see discussion above for further information). As a result, we recognized a non-cash settlement charge of \$383 million as of December 31, 2021 to accelerate the recognition of a portion of the previously unrecognized actuarial losses in the qualified pension plan, which is reflected in other income (expense), net in our consolidated statement of operations for the year ended December 31, 2021. This non-cash charge increased our recorded net loss and increased our recorded accumulated deficit, with an offset to accumulated other comprehensive loss in shareholders' equity for the year ended December 31, 2021. The amount of any future non-cash settlement charges will be dependent on several factors, including the total amount of our future lump sum benefit payments.

Benefit Obligations

The actuarial assumptions used to compute the funded status for the plans are based upon information available as of December 31, 2022 and 2021 and are as follows:

	Combined Pension Plan		Post-Retirement Benefit Plans	
	December 31,		December 31,	
	2022	2021	2022	2021
Actuarial assumptions at end of year:				
Discount rate	5.56 %	2.85 %	5.55 %	2.84 %
Rate of compensation increase	3.25 %	3.25 %	N/A	N/A
Initial health care cost trend rate	N/A	N/A	7.20% / 5.00%	5.75% / 5.00%
Ultimate health care cost trend rate	N/A	N/A	4.50 %	4.50 %
Year ultimate trend rate is reached	N/A	N/A	2030	2025

N/A - Not applicable

In 2021 and 2020, we adopted the revised mortality tables and projection scales released by the Society of Actuaries, which increased the projected benefit obligation of our benefit plans by \$37 million for 2021, and decreased the projected benefit obligation of our benefit plans by \$3 million for 2020. The Society of Actuaries did not release any revised mortality tables or projection scales in 2022.

The short-term and long-term interest crediting rates during 2022 for cash balance components of the Combined Pension Plan were 3.75% and 3.5%, respectively.

The following tables summarize the change in the benefit obligations for the Combined Pension Plan and post-retirement benefit plans:

	Combined Pension Plan		
	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Change in benefit obligation			
Benefit obligation at beginning of year	\$ 9,678	12,202	12,217
Plan spin-off	(2,552)	—	—
Service cost	37	56	59
Interest cost	154	201	324
Plan amendments	—	(13)	(3)
Special termination benefits charge	—	6	13
Actuarial (gain) loss	(1,432)	(337)	749
Benefits paid from plan assets	(590)	(766)	(1,157)
Settlement payments and annuity purchase	—	(1,671)	—
Benefit obligation at end of year	\$ 5,295	9,678	12,202

	Post-Retirement Benefit Plans		
	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Change in benefit obligation			
Benefit obligation at beginning of year	\$ 2,781	3,048	3,037
Benefit obligation transferred to purchaser upon sale of business	(26)	—	—
Service cost	10	14	14
Interest cost	72	47	69
Participant contributions	37	41	46
Direct subsidy receipts	2	3	6
Plan amendments	(41)	—	—
Actuarial (gain) loss	(591)	(125)	134
Curtailment loss	—	—	4
Benefits paid by company	(249)	(247)	(255)
Benefits paid from plan assets	—	—	(7)
Benefit obligation at end of year	\$ 1,995	2,781	3,048

Plan Assets

We maintain plan assets for our Combined Pension Plan and certain post-retirement benefit plans. As previously noted, assets in the post-retirement benefit plan trusts were substantially depleted as of December 31, 2016. The fair value of post-retirement benefit plan assets was \$5 million at December 31, 2022, 2021 and 2020. Due to the insignificance of these assets on our consolidated financial statements, we have predominantly excluded them from the disclosures of plan assets in this Note, unless otherwise indicated.

The following table summarizes the change in the fair value of plan assets for the Combined Pension Plan:

	Combined Pension Plan		
	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Change in plan assets			
Fair value of plan assets at beginning of year	\$ 8,531	10,546	10,493
Plan spin-off	(2,239)	—	—
Return on plan assets	(987)	422	1,210
Benefits paid from plan assets	(590)	(766)	(1,157)
Settlement payments and annuity purchase	—	(1,671)	—
Fair value of plan assets at end of year	\$ 4,715	8,531	10,546

The expected rate of return on plan assets is the long-term rate of return we expect to earn on the plan's assets, net of administrative expenses paid from plan assets. It is determined annually based on the strategic asset allocation and the long-term risk and return forecast for each asset class.

Our investment objective for the Combined Pension Plan assets is to achieve an attractive risk-adjusted return over time that will provide for the payment of benefits and minimize the risk of large losses. We employ a liability-aware investment strategy designed to reduce the volatility of pension assets relative to pension liabilities. This strategy is evaluated frequently and is expected to evolve over time with changes in the funded status and other factors. Approximately 55% of plan assets is targeted to long-duration investment grade bonds and interest rate sensitive derivatives and 45% is targeted to diversified equity, fixed income and private market investments that are expected to outperform the liability with moderate funded status risk. At the beginning of 2023, our expected annual long-term rate of return on pension assets before consideration of administrative expenses is assumed to be 7.0%. Administrative expenses, including projected PBGC (Pension Benefit Guaranty Corporation) premiums, reduce the annual long-term expected return, net of administrative expenses, to 6.5%.

Permitted investments: Plan assets are managed consistent with the restrictions set forth by the Employee Retirement Income Security Act of 1974, as amended.

Fair Value Measurements: Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between independent and knowledgeable parties who are willing and able to transact for an asset or liability at the measurement date. We use valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs when determining fair value and then we rank the estimated values based on the reliability of the inputs used following the fair value hierarchy set forth by the FASB. For additional information on the fair value hierarchy, see Note 14—Fair Value of Financial Instruments.

At December 31, 2022, we used the following valuation techniques to measure fair value for assets. There were no changes to these methodologies during 2022:

- Level 1—Assets were valued using the closing price reported in the active market in which the individual security was traded. U.S. Treasury securities are valued at the bid price reported in an active market in which the security is traded. Variation margin due from/(to) brokers is valued at the expected next day cash settlement amount.
- Level 2—Assets were valued using quoted prices in markets that are not active, broker dealer quotations, and other methods by which all significant inputs were observable at the measurement date. Fixed income securities primarily utilize observable market information and are based on a spread to U.S. Treasury securities and consider yields available on comparable securities of issuers with similar credit ratings, the new issue market for similar securities, secondary trading markets and dealer quotes. Option adjusted spread models are utilized to evaluate fixed income securities that have early redemption features. Derivative securities traded over the counter are valued based on gains or losses due to fluctuations in indices, interest rates, foreign currency exchange rates, security prices or other underlying factors. Repurchase agreements are valued based on expected settlement per the contract terms.
- Level 3—Assets were valued using unobservable inputs in which little or no market data exists as reported by the respective institutions at the measurement date. Valuation methods may consider a range of factors, including estimates based on the assumptions of the investment entity or actuarial assumptions of insurers for valuing Group Annuity Contracts.

The Combined Pension Plan's assets are invested in various asset categories utilizing multiple strategies and investment managers. Interests in commingled funds are fair valued using a practical expedient to the net asset value ("NAV") per unit (or its equivalent) of each fund. The NAV reported by the fund manager is based on the market value of the underlying investments owned by each fund, minus its liabilities, divided by the number of shares outstanding. Commingled funds can be redeemed at NAV, with a frequency that includes daily, monthly, quarterly, semi-annually and annually. These commingled funds include redemption notice periods between same day and 180 days. Investments in private funds, primarily limited partnerships, represent long-term commitments with a fixed maturity date and are also valued at NAV. The plan has unfunded commitments related to certain private fund investments, which in aggregate are not material to the plan. Valuation inputs for these private fund interests are generally based on assumptions and other information not observable in the market. Underlying investments held in funds are aggregated and are classified based on the fund mandate. Investments held in separate accounts are individually classified.

The table below presents the fair value of plan assets by category and the input levels used to determine those fair values at December 31, 2022. It is important to note that the asset allocations do not include market exposures that are gained with derivatives. Investments include dividend and interest receivables, pending trades and accrued expenses.

Fair Value of Combined Pension Plan Assets at December 31, 2022				
	Level 1	Level 2	Level 3	Total
(Dollars in millions)				
Assets				
Investment grade bonds (a)	\$ 446	1,720	—	2,166
High yield bonds (b)	—	48	4	52
Emerging market bonds (c)	49	78	—	127
U.S. stocks (d)	214	—	1	215
Non-U.S. stocks (e)	149	1	—	150
Multi-asset strategies (l)	25	—	—	25
Cash equivalents and short-term investments (o)	—	1	—	1
Total investments, excluding investments valued at NAV	\$ 883	1,848	5	2,736
Liabilities				
Repurchase agreements (n)	\$ —	(269)	—	(269)
Derivatives (m)	(1)	(10)	—	(11)
Investments valued at NAV				2,259
Total pension plan assets				\$ 4,715

The table below presents the fair value of plan assets by category and the input levels used to determine those fair values at December 31, 2021. It is important to note that the asset allocations do not include market exposures that are gained with derivatives. Investments include dividend and interest receivable, pending trades and accrued expenses.

Fair Value of Combined Pension Plan Assets at December 31, 2021				
	Level 1	Level 2	Level 3	Total
(Dollars in millions)				
Assets				
Investment grade bonds (a)	\$ 862	3,744	—	4,606
High yield bonds (b)	—	172	6	178
Emerging market bonds (c)	64	169	—	233
U.S. stocks (d)	330	3	5	338
Non-U.S. stocks (e)	256	—	—	256
Multi-asset strategies (l)	41	—	—	41
Derivatives (m)	—	1	—	1
Cash equivalents and short-term investments (o)	2	379	—	381
Total investments, excluding investments valued at NAV	\$ 1,555	4,468	11	6,034
Liabilities				
Repurchase agreements (n)	\$ —	(193)	—	(193)
Investments valued at NAV				2,690
Total pension plan assets				\$ 8,531

The table below presents the fair value of plan assets valued at NAV by category for our Combined Pension Plan at December 31, 2022 and 2021.

	Fair Value of Plan Assets Valued at NAV	
	Combined Pension Plan at	
	December 31,	
	2022	2021
	(Dollars in millions)	
Investment grade bonds (a)	\$ 99	127
High yield bonds (b)	81	70
U.S. stocks (d)	79	71
Non-U.S. stocks (e)	270	398
Emerging market stocks (f)	15	11
Private equity (g)	326	348
Private debt (h)	438	495
Market neutral hedge funds (i)	135	141
Directional hedge funds (j)	166	241
Real estate (k)	333	420
Multi-asset strategies (l)	24	38
Cash equivalents and short-term investments (o)	293	330
Total investments valued at NAV	\$ 2,259	2,690

Below is an overview of the asset categories and the underlying strategies used in the preceding tables:

(a) *Investment grade bonds* represent investments in fixed income securities as well as commingled bond funds comprised of U.S. Treasury securities, agencies, corporate bonds, mortgage-backed securities, asset-backed securities and commercial mortgage-backed securities.

(b) *High yield bonds* represent investments in below investment grade fixed income securities as well as commingled high yield bond funds.

(c) *Emerging market bonds* represent investments in securities issued by governments and other entities located in emerging countries as well as registered mutual funds and commingled emerging market bond funds.

(d) *U.S. stocks* represent investments in stocks of U.S. based companies as well as commingled U.S. stock funds.

(e) *Non-U.S. stocks* represent investments in stocks of companies based in developed countries outside the U.S. as well as commingled funds.

(f) *Emerging market stocks* represent investments in commingled funds comprised of stocks of companies located in emerging markets.

(g) *Private equity* represents non-public investments in domestic and foreign buy out and venture capital funds. Private equity funds are primarily structured as limited partnerships and are valued according to the valuation policy of each partnership, subject to prevailing accounting and other regulatory guidelines.

(h) *Private debt* represents non-public investments in distressed or mezzanine debt funds and pension group insurance contracts.

(i) *Market neutral hedge funds* hold investments in a diversified mix of instruments that are intended in combination to exhibit low correlations to market fluctuations. These investments are typically combined with futures to achieve uncorrelated excess returns over various markets.

(j) *Directional hedge funds*—This asset category represents investments that may exhibit somewhat higher correlations to market fluctuations than the market neutral hedge funds. Investments in hedge funds include both direct investments and investments in diversified funds of funds.

(k) *Real estate* represents investments in commingled funds and limited partnerships that invest in a diversified portfolio of real estate properties.

(l) *Multi-asset strategies* represent broadly diversified strategies that have the flexibility to tactically adjust exposures to different asset classes through time.

(m) *Derivatives* include exchange traded futures contracts as well as privately negotiated over the counter contracts. The market values represent gains or losses that occur due to differences between stated contract terms and fluctuations in underlying market instruments.

(n) *Repurchase Agreements* includes contracts where the security owner sells a security with the agreement to buy it back at a future date and price.

(o) *Cash equivalents and short-term investments* represent investments that are used in conjunction with derivatives positions or are used to provide liquidity for the payment of benefits or other purposes.

Derivative instruments: Derivative instruments are used to reduce risk as well as provide return. The gross notional exposure of the derivative instruments directly held by the Combined Pension Plan is shown below. The notional amount of the derivatives corresponds to market exposure but does not represent an actual cash investment.

	Gross Notional Exposure	
	Combined Pension Plan	
	Years Ended December 31,	
	2022	2021
	(Dollars in millions)	
Derivative instruments:		
Exchange-traded U.S. equity futures	\$ 70	108
Exchange-traded Treasury and other interest rate futures	1,256	1,688
Exchange-traded Foreign currency futures	2	11
Exchange-traded EURO futures	—	5
Interest rate swaps	82	127
Credit default swaps	139	132
Index swaps	90	1,036
Foreign exchange forwards	50	93
Options	251	654

Concentrations of Risk: Investments, in general, are exposed to various risks, such as significant world events, interest rate, credit, foreign currency and overall market volatility risk. These risks are managed by broadly diversifying assets across numerous asset classes and strategies with differing expected returns, volatilities and correlations. Risk is also broadly diversified across numerous market sectors and individual companies. Financial instruments that potentially subject the plans to concentrations of counterparty risk consist principally of investment contracts with high quality financial institutions. These investment contracts are typically collateralized obligations and/or are actively managed, limiting the amount of counterparty exposure to any one financial institution. Although the investments are well diversified, the value of plan assets could change materially depending upon the overall market volatility, which could affect the funded status of the plan.

The table below presents a rollforward of the Combined Pension Plan assets valued using Level 3 inputs:

	Combined Pension Plan Assets Valued Using Level 3 Inputs		
	High Yield Bonds	U.S. Stocks	Total
	(Dollars in millions)		
Balance at December 31, 2020	\$ 6	2	8
Actual return on plan assets	—	3	3
Balance at December 31, 2021	6	5	11
Dispositions	(1)	(4)	(5)
Actual return on plan assets	(1)	—	(1)
Balance at December 31, 2022	\$ 4	1	5

Certain gains and losses are allocated between assets sold during the year and assets still held at year-end based on transactions and changes in valuations that occurred during the year. These allocations also impact our calculation of net acquisitions and dispositions.

For the year ended December 31, 2022, the investment program produced actual losses on Combined Pension Plan assets of \$987 million as compared to expected returns of \$329 million, for a difference of \$1.3 billion. For the year ended December 31, 2021, the investment program produced actual gains on Combined Pension Plan assets of \$422 million as compared to the expected returns of \$535 million, for a difference of \$113 million. The short-term annual returns on plan assets will almost always be different from the expected long-term returns and the plans could experience net gains or losses, due primarily to the volatility occurring in the financial markets during any given year.

Unfunded Status

The following table presents the unfunded status of the Combined Pension Plan and post-retirement benefit plans:

	Combined Pension Plan		Post-Retirement Benefit Plans	
	Years Ended December 31,		Years Ended December 31,	
	2022	2021	2022	2021
	(Dollars in millions)			
Benefit obligation	\$ (5,295)	(9,678)	(1,995)	(2,781)
Fair value of plan assets	4,715	8,531	5	5
Unfunded status	(580)	(1,147)	(1,990)	(2,776)
Current portion of unfunded status	—	—	(210)	(212)
Non-current portion of unfunded status	\$ (580)	(1,147)	(1,780)	(2,564)

The current portion of our post-retirement benefit obligations is recorded on our consolidated balance sheets in accrued expenses and other current liabilities-salaries and benefits.

Accumulated Other Comprehensive Loss-Recognition and Deferrals

The following table presents cumulative items not recognized as a component of net periodic benefits expense as of December 31, 2021, items recognized as a component of net periodic benefits expense in 2022, additional items deferred during 2022 and cumulative items not recognized as a component of net periodic benefits expense as of December 31, 2022. The items not recognized as a component of net periodic benefits expense have been recorded on our consolidated balance sheets in accumulated other comprehensive loss:

As of and for the Years Ended December 31,					
2021	Recognition of Net Periodic Benefits Expense	Deferrals	Net Change in AOCL	2022	
(Dollars in millions)					
Accumulated other comprehensive (loss) income					
Pension plans:					
Net actuarial (loss) gain	\$ (2,564)	688	124	812	(1,752)
Settlement charge	383	—	—	—	383
Prior service benefit (cost)	45	(28)	—	(28)	17
Deferred income tax benefit (expense)	559	(166)	(26)	(192)	367
Total pension plans	(1,577)	494	98	592	(985)
Post-retirement benefit plans:					
Net actuarial (loss) gain	(217)	(3)	591	588	371
Prior service (cost) benefit	(5)	1	41	42	37
Curtailment loss	4	—	—	—	4
Deferred income tax benefit (expense)	54	1	(159)	(158)	(104)
Total post-retirement benefit plans	(164)	(1)	473	472	308
Total accumulated other comprehensive (loss) income	\$ (1,741)	493	571	1,064	(677)

The following table presents cumulative items not recognized as a component of net periodic benefits expense as of December 31, 2020, items recognized as a component of net periodic benefits expense in 2021, additional items deferred during 2021 and cumulative items not recognized as a component of net periodic benefits expense as of December 31, 2020. The items not recognized as a component of net periodic benefits expense have been recorded on our consolidated balance sheets in accumulated other comprehensive loss:

As of and for the Years Ended December 31,					
2020	Recognition of Net Periodic Benefits Expense	Deferrals	Net Change in AOCL	2021	
(Dollars in millions)					
Accumulated other comprehensive (loss) income					
Pension plans:					
Net actuarial (loss) gain	\$ (2,993)	186	243	429	(2,564)
Settlement charge	—	383	—	383	383
Prior service benefit (cost)	41	(9)	13	4	45
Deferred income tax benefit (expense)	755	(137)	(59)	(196)	559
Total pension plans	<u>(2,197)</u>	<u>423</u>	<u>197</u>	<u>620</u>	<u>(1,577)</u>
Post-retirement benefit plans:					
Net actuarial (loss) gain	(346)	4	125	129	(217)
Prior service (cost) benefit	(20)	15	—	15	(5)
Curtailment loss	4	—	—	—	4
Deferred income tax benefit (expense)	90	(5)	(31)	(36)	54
Total post-retirement benefit plans	<u>(272)</u>	<u>14</u>	<u>94</u>	<u>108</u>	<u>(164)</u>
Total accumulated other comprehensive (loss) income	<u>\$ (2,469)</u>	<u>437</u>	<u>291</u>	<u>728</u>	<u>(1,741)</u>

Medicare Prescription Drug, Improvement and Modernization Act of 2003

We sponsor post-retirement health care plans with several benefit options that provide prescription drug benefits that we deem actuarially equivalent to or exceeding Medicare Part D. We recognize the impact of the federal subsidy received under the Medicare Prescription Drug, Improvement and Modernization Act of 2003 in the calculation of our post-retirement benefit obligation and net periodic post-retirement benefit expense.

Other Benefit Plans

Health Care and Life Insurance

We provide health care and life insurance benefits to essentially all of our active employees. We are largely self-funded for the cost of the health care plan. Our health care benefit expense for current employees was \$296 million, \$309 million and \$307 million for the years ended December 31, 2022, 2021 and 2020, respectively. Union-represented employee benefits are based on negotiated collective bargaining agreements. Employees contributed \$101 million, \$120 million, \$133 million for the years ended December 31, 2022, 2021 and 2020, respectively. Our group basic life insurance plans are fully insured and the premiums are paid by us.

401(k) Plans

We sponsor a qualified defined contribution plan covering substantially all of our U.S. employees. Under this plan, employees may contribute a percentage of their annual compensation up to certain maximums, as defined by the plan and by the Internal Revenue Service. Currently, we match a percentage of employee contributions in cash. At December 31, 2022 and 2021, the assets of the plan included approximately 10 million shares of our common stock, all of which were the result of the combination of previous employer match and participant directed contributions. We recognized expenses related to this plan of \$91 million, \$96 million and \$101 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Deferred Compensation Plans

We sponsor non-qualified deferred compensation plans for various groups that included certain of our current and former highly compensated employees. The value of liabilities related to these plans was not significant.

(12) Stock-based Compensation

We maintain an equity incentive program that allows our Board of Directors (through its Compensation Committee or a senior officer acting under delegated authority) to grant incentives to certain employees and outside directors in one or more forms, including: incentive and non-qualified stock options, stock appreciation rights, restricted stock awards, restricted stock units and market and performance shares. Stock options generally expire ten years from the date of grant. There were no outstanding stock options as of December 31, 2022.

Restricted Stock Awards and Restricted Stock Unit Awards

For equity based restricted stock and restricted stock unit awards that contain only service conditions for vesting (time-based awards), we calculate the award fair value based on the closing price of our common stock on the accounting grant date. We also grant equity-based awards that contain additional market or performance conditions, as well as service conditions. For awards having both service and market conditions, the award fair value is calculated using Monte-Carlo simulations. Awards with service as well as performance conditions specify a target number of shares for the award, although each recipient ultimately has the opportunity to receive between 0% and 200% of the target number of shares. For awards with service and market conditions, the percentage received is typically based on our total shareholder return over the up to three-year service period versus that of selected peer companies. For awards with service and performance conditions, the percentage received depends upon the attainment of one or more performance targets during the two- or three-year service period.

The following table summarizes activity involving restricted stock and restricted stock unit awards for the year ended December 31, 2022:

	Number of Shares	Weighted- Average Grant Date Fair Value
	(in thousands)	
Non-vested at December 31, 2021	22,427	\$ 12.74
Granted	18,788	11.47
Vested	(9,412)	12.03
Forfeited	(4,524)	12.65
Non-vested at December 31, 2022	<u>27,279</u>	12.13

During 2022, we granted 18.8 million shares of restricted stock and restricted stock unit awards at a weighted-average price of \$11.47. During 2021, we granted 13.9 million shares of restricted stock and restricted stock unit awards at a weighted-average price of \$13.95. During 2020, we granted 17.8 million shares of restricted stock and restricted stock unit awards at a weighted-average price of \$12.08. The total fair value of restricted stock and restricted stock unit awards that vested during 2022, 2021 and 2020, was \$98 million, \$139 million and \$126 million, respectively. We do not estimate forfeitures, but recognize them as they occur.

Compensation Expense and Tax Benefit

For time-based awards that vest ratably over the service period, we recognize compensation expense on a straight-line basis over the requisite service period for the entire award. For our performance stock-based awards, we recognize compensation expense over the service period and based upon the expected performance outcome, until the final performance outcome is determined. Total compensation expense for all stock-based payment arrangements for the years ended December 31, 2022, 2021 and 2020, was \$98 million, \$120 million and \$175 million, respectively. Our tax benefit recognized in the consolidated statements of operations for our stock-based payment arrangements for the years ended December 31, 2022, 2021 and 2020, was \$25 million, \$29 million and \$43 million, respectively. At December 31, 2022, there was \$162 million of total unrecognized compensation expense related to our stock-based payment arrangements, which we expect to recognize over a weighted-average period of 1.5 years.

(13) Earnings (Loss) Per Common Share

Basic and diluted earnings (loss) per common share for the years ended December 31, 2022, 2021 and 2020 were calculated as follows:

	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions, except per share amounts, shares in thousands)		
(Loss) income (numerator)			
Net (loss) income	\$ (1,548)	2,033	(1,232)
Net (loss) income applicable to common stock for computing basic (loss) earnings per common share	(1,548)	2,033	(1,232)
Net (loss) income as adjusted for purposes of computing diluted (loss) earnings per common share	\$ (1,548)	2,033	(1,232)
Shares (denominator):			
Weighted average number of shares:			
Outstanding during period	1,028,069	1,077,393	1,096,284
Non-vested restricted stock	(20,552)	(17,852)	(17,154)
Weighted average shares outstanding for computing basic (loss) earnings per common share	1,007,517	1,059,541	1,079,130
Incremental common shares attributable to dilutive securities:			
Shares issuable under convertible securities	—	10	—
Shares issuable under incentive compensation plans	—	7,227	—
Number of shares as adjusted for purposes of computing diluted (loss) earnings per common share	1,007,517	1,066,778	1,079,130
Basic (loss) earnings per common share	\$ (1.54)	1.92	(1.14)
Diluted earnings (loss) per common share ⁽¹⁾	\$ (1.54)	1.91	(1.14)

⁽¹⁾ For the years ended December 31, 2022 and December 31, 2020, we excluded from the calculation of diluted loss per share 3.8 million and 5.3 million shares, respectively, potentially issuable under incentive compensation plans or convertible securities, as their effect, if included, would have been anti-dilutive.

Our calculation of diluted (loss) earnings per common share excludes shares of common stock that are issuable upon exercise of stock options when the exercise price is greater than the average market price of our common stock. We also exclude unvested restricted stock awards that are antidilutive as a result of unrecognized compensation cost. Such shares were 13.8 million, 3.2 million and 3.2 million for 2022, 2021 and 2020, respectively.

(14) Fair Value of Financial Instruments

Our financial instruments consist of cash, cash equivalents, restricted cash, accounts receivable, accounts payable, long-term debt (excluding finance lease and other obligations), interest rate swap contracts, certain equity investments and certain indemnification obligations. Due primarily to their short-term nature, the carrying amounts of our cash, cash equivalents, restricted cash, accounts receivable and accounts payable approximate their fair values.

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between independent and knowledgeable parties who are willing and able to transact for an asset or liability at the measurement date. We use valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs when determining fair value and then we rank the estimated values based on the reliability of the inputs used following the fair value hierarchy.

We determined the fair values of our long-term debt, including the current portion, based on quoted market prices where available or, if not available, based on inputs other than quoted market prices in active markets that are either directly or indirectly observable such as discounted future cash flows using current market interest rates.

The three input levels in the hierarchy of fair value measurements are defined by the FASB generally as follows:

Input Level	Description of Input
Level 1	Observable inputs such as quoted market prices in active markets.
Level 2	Inputs other than quoted prices in active markets that are either directly or indirectly observable.
Level 3	Unobservable inputs in which little or no market data exists.

The following table presents the carrying amounts and estimated fair values of our financial assets and liabilities as of December 31, 2022:

	Input Level	As of December 31, 2022		As of December 31, 2021	
		Carrying Amount	Fair Value	Carrying Amount	Fair Value
		(Dollars in millions)			
Equity securities ⁽¹⁾	1	\$ 22	22	—	—
Long-term debt, excluding finance lease and other obligations ⁽²⁾	2	\$ 20,255	17,309	28,635	29,221
Interest rate swap contracts (see Note 15)	2	—	—	25	25
Indemnifications related to the sale of the Latin American business	3	86	86	—	—

⁽¹⁾ For the year ended December 31, 2022, we recognized \$109 million of loss on equity securities in other (expense) income, net in our consolidated statements of operations.

⁽²⁾ As of December 31, 2021, these amounts excluded \$1.4 billion of carrying amount and \$1.6 billion of fair value of debt that had been classified as held for sale related to our divestiture of the ILEC business on October 3, 2022. See Note 2—Divestitures of the Latin American and ILEC Businesses and Planned Divestiture of the EMEA Business for more information.

Investment Held at Net Asset Value

We hold an investment in a limited partnership created as a holding company for various investments, including a portion of the colocation and data center business that we divested in 2017. The limited partnership has sole discretion as to the amount and timing of distributions of the underlying assets. As of December 31, 2022, the underlying investments held by the limited partnership are traded in active markets and, as such, we account for our investment in the limited partnership using NAV. The investments held by the limited partnership were subject to lock-up agreements that restricted the sale or distribution of certain underlying assets prior to July 2022 and October 2022. The restrictions on one of the investments held by the limited partnership expired on July 29, 2022, and we received a distribution of 11.5 million shares of publicly-traded common stock, which are reflected in our fair value table as of December 31, 2022, as seen above. The restriction on the remaining underlying investment expired on October 12, 2022. No shares have been distributed to date. Subject to restrictions imposed by law and other provisions of the limited partnership agreement, the general partner has the sole discretion as to the amounts and timing of distributions of partnership assets to partners. The following table summarizes the net asset value of our investment in this limited partnership.

	<u>As of December 31, 2022</u>	<u>As of December 31, 2021</u>
	<u>Net Asset Value</u>	
	<u>(Dollars in millions)</u>	
Investment in limited partnership ⁽¹⁾	\$ 85	299

⁽¹⁾ For the years ended December 31, 2022 and December 31, 2021, we recognized \$83 million of loss on investment and \$138 million of gain on investment, respectively, reflected in other income (expense), net in our consolidated statement of operations.

(15) Derivative Financial Instruments

From time to time, we use derivative financial instruments, primarily interest rate swaps, to manage our exposure to fluctuations in interest rates. Our primary objective in managing interest rate risk is to decrease the volatility of our earnings and cash flows affected by changes in the underlying rates. We have floating rate long-term debt (see Note 7—Long-Term Debt and Credit Facilities). These obligations expose us to variability in interest payments due to changes in interest rates. If interest rates increase, our interest expense increases. Conversely, if interest rates decrease, our interest expense also decreases. Through their expiration on June 30, 2022, we designated the interest rate swap agreements described below as cash flow hedges. Under these hedges, we received variable-rate amounts from a counterparty in exchange for us making fixed-rate payments over the lives of the agreements without exchange of the underlying notional amount. The change in the fair value of the interest rate swap agreements was reflected in accumulated other comprehensive loss and was subsequently reclassified into earnings in the period that the hedged transaction affected earnings by virtue of qualifying as effective cash flow hedges. We do not use derivative financial instruments for speculative purposes.

In 2019, we entered into variable-to-fixed interest rate swap agreements to hedge the interest on \$4.0 billion notional amount of floating rate debt. As of December 31, 2021 and 2020, we evaluated the effectiveness of our remaining hedges quantitatively and determined that hedges in effect on such dates qualified as effective hedge relationships.

We may be exposed to credit-related losses in the event of non-performance by counterparties. The counterparties to any of the financial derivatives we enter into are major institutions with investment grade credit ratings. We evaluate counterparty credit risk before entering into any hedge transaction and continue to closely monitor the financial markets and the risk that our counterparties will default on their obligations as part of our quarterly qualitative effectiveness evaluation.

Amounts accumulated in accumulated other comprehensive loss related to derivatives are indirectly recognized in earnings as periodic settlement payments are made throughout the term of the swaps.

The table below presents the fair value of our derivative financial instruments as well as their classification on the consolidated balance sheets at December 31, 2022 and December 31, 2021 as follows (in millions):

Derivatives designated as	Balance Sheet Location	December 31, 2022	December 31, 2021
		Fair Value	
Cash flow hedging contracts	Other current and noncurrent liabilities	\$ —	25

The amount of unrealized losses recognized in accumulated other comprehensive loss consists of the following (in millions):

Derivatives designated as hedging instruments	2022	2021	2020
Cash flow hedging contracts			
Years Ended December 31,	\$ —	1	115

The amount of realized losses reclassified from accumulated other comprehensive loss to the statement of operations consists of the following (in millions):

Derivatives designated as hedging instruments	2022	2021	2020
Cash flow hedging contracts			
Years Ended December 31,	\$ 22	83	62

Amounts included in accumulated other comprehensive loss at the beginning of the period were reclassified into earnings upon the settlement of the cash flow hedging contracts on March 31, 2022 and June 30, 2022. During the year ended December 31, 2022, \$19 million of net losses on the interest rate swaps have been reflected in our consolidated statements of operations upon settlement of the agreements in the first half of 2022.

(16) Income Taxes

The components of the income tax expense are as follows:

	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Income tax expense:			
Federal			
Current	\$ 838	5	5
Deferred	(332)	514	338
State			
Current	283	42	50
Deferred	(191)	72	55
Foreign			
Current	32	23	29
Deferred	(73)	12	(27)
Total income tax expense	\$ 557	668	450

	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Income tax expense was allocated as follows:			
Income tax expense in the consolidated statements of operations:			
Attributable to income	\$ 557	668	450
Stockholders' equity:			
Tax effect of the change in accumulated other comprehensive loss	\$ 297	222	17

The following is a reconciliation from the statutory federal income tax rate to our effective income tax rate:

	Years Ended December 31,		
	2022	2021	2020
	(Percentage of pre-tax (loss) income)		
Statutory federal income tax rate	21.0 %	21.0 %	21.0 %
State income taxes, net of federal income tax benefit	(8.8)%	3.3 %	(10.8)%
Goodwill impairment	(68.9)%	— %	(71.0)%
Change in liability for unrecognized tax position	(0.2)%	0.1 %	(0.6)%
Legislative changes to Global Intangible Low-Taxes Income ("GILTI")	— %	— %	1.8 %
Nondeductible executive stock compensation	(0.1)%	0.2 %	(1.6)%
Change in valuation allowance	0.9 %	— %	2.6 %
Net foreign income taxes	3.0 %	0.6 %	(0.6)%
Research and development credits	1.1 %	(0.5)%	1.6 %
Divestitures of businesses ⁽¹⁾	(4.0)%	— %	— %
Other, net	(0.2)%	— %	0.1 %
Effective income tax rate	<u>(56.2)%</u>	<u>24.7 %</u>	<u>(57.5)%</u>

⁽¹⁾ Includes GILTI incurred as a result of the sale of our Latin American business.

The effective tax rate for the year ended December 31, 2022 includes a \$682 million unfavorable impact of non-deductible goodwill impairments and \$128 million unfavorable impact related to incurring GILTI as a result of the sale of our Latin American business. The effective tax rate for the year ended December 31, 2020 includes a \$555 million unfavorable impact of non-deductible goodwill impairments, a \$14 million favorable impact in tax regulations passed in 2020 allowing a high tax exception related to our tax exposure of to GILTI, as well as a \$20 million benefit related to the release of previously established valuation allowances against capital losses.

The tax effects of temporary differences that gave rise to significant portions of the deferred tax assets and deferred tax liabilities were as follows:

	As of December 31,	
	2022 ⁽¹⁾	2021 ⁽¹⁾
(Dollars in millions)		
Deferred tax assets		
Post-retirement and pension benefit costs	\$ 725	978
Net operating loss carryforwards	871	2,463
Other employee benefits	85	96
Other	519	554
Gross deferred tax assets	2,200	4,091
Less valuation allowance	(550)	(1,566)
Net deferred tax assets	1,650	2,525
Deferred tax liabilities		
Property, plant and equipment, primarily due to depreciation differences	(3,046)	(3,941)
Goodwill and other intangible assets	(1,634)	(2,473)
Gross deferred tax liabilities	(4,680)	(6,414)
Net deferred tax liability	\$ (3,030)	(3,889)

⁽¹⁾ Excludes \$138 million of deferred tax assets and \$38 million of deferred tax liabilities related to the EMEA business that were classified as held for sale as of December 31, 2022. Excludes \$46 million of deferred tax assets and \$129 million of deferred tax liabilities related to the Latin American business sold on August 1, 2022 that were classified as held for sale as of December 31, 2021. There were no material deferred tax amounts classified as held for sale related to the ILEC business.

Of the \$3.0 billion and \$3.9 billion net deferred tax liability at December 31, 2022 and 2021, respectively, \$3.2 billion and \$4.0 billion is reflected as a long-term liability and \$133 million and \$160 million is reflected as a net noncurrent deferred tax asset, in other, net on our consolidated balance sheets at December 31, 2022 and 2021, respectively.

Income taxes payable as of December 31, 2022 and 2021 were \$943 million and \$3 million, respectively. The increase to our payable in the current period is primarily driven by the sale of our Latin American and ILEC businesses.

At December 31, 2022, we had federal NOLs of \$1.0 billion, net of expirations from Section 382 limitations and uncertain tax positions, for U.S. federal income tax purposes. We expect to use substantially all of these tax attributes to reduce our future federal tax liabilities, although the timing of that use will depend upon our future earnings and future tax circumstances. Our ability to use these NOLs is subject to annual limits imposed by Section 382. As a result, we anticipate that our cash income tax liabilities will increase substantially in future periods. If unused, the NOLs will expire between 2028 and 2033. The federal NOLs will expire as follows:

	Expiring December 31,	Amount (Dollars in millions)
2028		572
2029		645
2030		668
2031		733
2032		348
2033		238
NOLs per return		3,204
Uncertain tax positions		(2,190)
Financial NOLs		\$ 1,014

At December 31, 2022 we had state net operating loss carryforwards of \$13 billion (net of uncertain tax positions). Our acquisitions of Level 3, Qwest and SAVVIS, Inc. caused "ownership changes" within the meaning of Section 382 for the acquired companies. As a result, our ability to use these NOLs and tax credits are subject to annual limits imposed by Section 382.

We establish valuation allowances when necessary to reduce the deferred tax assets to amounts we expect to realize. As of December 31, 2022, a valuation allowance of \$550 million was established as it is more likely than not that this amount of net operating loss, capital loss and tax credit carryforwards will not be utilized prior to expiration. Our valuation allowance at December 31, 2022 and 2021 is primarily related to NOL carryforwards. This valuation allowance decreased by \$1.0 billion during 2022, primarily due to the impact of adjustments related to the planned divestiture of our EMEA business, including classification of a portion of the valuation allowance as held for sale.

A reconciliation of the change in our gross unrecognized tax benefits (excluding both interest and any related federal benefit) from January 1 to December 31 for 2022 and 2021 is as follows:

	<u>2022</u>	<u>2021</u>
	(Dollars in millions)	
Unrecognized tax benefits at beginning of year	\$ 1,375	1,474
Increase in tax positions of the current year netted against deferred tax assets	—	1
Increase in tax positions of prior periods netted against deferred tax assets	—	—
Decrease in tax positions of the current year netted against deferred tax assets	—	(101)
Decrease in tax positions of prior periods netted against deferred tax assets	(661)	(1)
Increase in tax positions taken in the current year	634	4
(Decrease) increase in tax positions taken in the prior year	(3)	2
Decrease due to payments/settlements	—	(3)
Decrease from the lapse of statute of limitations	—	(1)
Decrease related to divestitures of businesses	\$ (27)	—
Unrecognized tax benefits at end of year	<u>\$ 1,318</u>	<u>\$ 1,375</u>

The total amount (including both interest and any related federal benefit) of unrecognized tax benefits that, if recognized, would impact the effective income tax rate was \$847 million and \$273 million at December 31, 2022 and 2021, respectively.

Our policy is to reflect interest expense associated with unrecognized tax benefits in income tax expense. We had accrued interest (presented before related tax benefits) of approximately \$26 million and \$24 million at December 31, 2022 and 2021, respectively.

We, or at least one of our subsidiaries, file income tax returns in the U.S. federal jurisdiction and various states and foreign jurisdictions. With few exceptions, we are no longer subject to U.S. federal, state and local, or non-U.S. income tax examinations by tax authorities for years before 2002. The Internal Revenue Service and state and local taxing authorities reserve the right to audit any period where net operating loss carryforwards are available.

Based on our current assessment of various factors, including (i) the potential outcomes of these ongoing examinations, (ii) the expiration of statute of limitations for specific jurisdictions, (iii) the negotiated settlement of certain disputed issues, and (iv) the administrative practices of applicable taxing jurisdictions, it is reasonably possible that the related unrecognized tax benefits for uncertain tax positions previously taken may decrease by up to \$1 million within the next 12 months. The actual amount of such decrease, if any, will depend on several future developments and events, many of which are outside our control.

(17) Segment Information

We report our results within two segments: Business and Mass Markets.

Under our Business segment we provide products and services to meet the needs of our enterprise and wholesale customers under four distinct sales channels: International and Global Accounts, Large Enterprise, Mid-Market Enterprise and Wholesale. As previously disclosed, we plan to update these sales channels beginning with our first quarterly report filed after this annual report. For Business segment revenue, we report the following product categories: Compute and Application Services, IP and Data Services, Fiber Infrastructure Services and Voice and Other, in each case through the sales channels outlined above. The Business segment included the results of our Latin American business prior to it being sold on August 1, 2022.

Under our Mass Markets Segment, we provide products and services to residential and small business customers. Following the completion of the CAF II program at December 31, 2021, we recategorized our products used to report our Mass Markets segment revenue and currently use the following categories: Fiber Broadband, Other Broadband and Voice and Other. See detailed descriptions of these product and service categories in Note 4—Revenue Recognition.

As described in more detail below, our segments are managed based on the direct costs of providing services to their customers and directly associated selling, general and administrative costs (primarily salaries and commissions). Shared costs are managed separately and included in "Operations and Other" in the tables below. As referenced above, we reclassified certain prior period amounts to conform to the current period presentation. See Note 1—Background and Summary of Significant Accounting Policies for additional detail on these changes.

The following tables summarize our segment results for 2022, 2021 and 2020 based on the segment categorization we were operating under at December 31, 2022.

Year Ended December 31, 2022					
	Business	Mass Markets	Total Segments	Operations and Other	Total
	(Dollars in millions)				
Revenue:	\$ 13,039	4,439	17,478	—	17,478
Expenses:					
Cost of services and products	3,260	123	3,383	4,485	7,868
Selling, general and administrative	1,101	562	1,663	1,415	3,078
Gain on sale of businesses	—	—	—	(773)	(773)
Loss on disposal groups held for sale	—	—	—	700	700
Less: stock-based compensation	—	—	—	(98)	(98)
Total expense	4,361	685	5,046	5,729	10,775
Total adjusted EBITDA	\$ 8,678	3,754	12,432	(5,729)	6,703

Year Ended December 31, 2021					
	Business	Mass Markets	Total Segments	Operations and Other	Total
	(Dollars in millions)				
Revenue:	\$ 14,119	5,568	19,687	—	19,687
Expenses:					
Cost of services and products	3,488	153	3,641	4,847	8,488
Selling, general and administrative	1,178	539	1,717	1,178	2,895
Less: stock-based compensation	—	—	—	(120)	(120)
Total expense	4,666	692	5,358	5,905	11,263
Total adjusted EBITDA	\$ 9,453	4,876	14,329	(5,905)	8,424

Year Ended December 31, 2020

	Business	Mass Markets	Total Segments	Operations and Other	Total
	(Dollars in millions)				
Revenue:	\$ 14,808	5,904	20,712	—	20,712
Expenses:					
Cost of services and products	3,661	201	3,862	5,072	8,934
Selling, general and administrative	1,262	581	1,843	1,621	3,464
Less: stock-based compensation	—	—	—	(175)	(175)
Total expense	4,923	782	5,705	6,518	12,223
Total adjusted EBITDA	\$ 9,885	5,122	15,007	(6,518)	8,489

Revenue and Expenses

Our segment revenue includes all revenue from our two segments as described in more detail above. Our segment revenue is based upon each customer's classification. We report our segment revenue based upon all services provided to that segment's customers. Our segment expenses include specific cost of service expenses incurred as a direct result of providing services and products to segment customers, along with selling, general and administrative expenses that are directly associated with specific segment customers or activities. We have not allocated assets or debt to specific segments.

The following items are excluded from our segment results, because they are centrally managed and not monitored by or reported to our chief operating decision maker by segment:

- network expenses not incurred as a direct result of providing services and products to segment customers and centrally managed expenses such as Finance, Human Resources, Legal, Marketing, Product Management and IT, all of which are reported as "Operations and Other" in the tables above, and "Operations and other expenses" in the table below;
- depreciation and amortization expense;
- goodwill or other impairments;
- interest expense;
- stock-based compensation; and
- other income and expense items.

The following table reconciles total segment adjusted EBITDA to net (loss) income for the years ended December 31, 2022, 2021 and 2020:

	Years Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Total segment adjusted EBITDA	\$ 12,432	14,329	15,007
Depreciation and amortization	(3,239)	(4,019)	(4,710)
Goodwill impairment	(3,271)	—	(2,642)
Operations and other expenses	(5,729)	(5,905)	(6,518)
Stock-based compensation	(98)	(120)	(175)
Operating income	95	4,285	962
Total other expense, net	(1,086)	(1,584)	(1,744)
(Loss) income before income taxes	(991)	2,701	(782)
Income tax expense	557	668	450
Net (loss) income	\$ (1,548)	2,033	(1,232)

We do not have any single customer that comprises more than 10% of our consolidated total operating revenue.

The assets we hold outside of the U.S. represent less than 10% of our total assets. Revenue from sources outside of the U.S. comprises less than 10% of our total operating revenue.

(18) Commitments, Contingencies and Other Items

We are subject to various claims, legal proceedings and other contingent liabilities, including the matters described below, which individually or in the aggregate could materially affect our financial condition, future results of operations or cash flows. As a matter of course, we are prepared to both litigate these matters to judgment as needed, as well as to evaluate and consider reasonable settlement opportunities.

Irrespective of its merits, litigation may be both lengthy and disruptive to our operations and could cause significant expenditure and diversion of management attention. We review our litigation accrual liabilities on a quarterly basis, but in accordance with applicable accounting guidelines only establish accrual liabilities when losses are deemed probable and reasonably estimable and only revise previously-established accrual liabilities when warranted by changes in circumstances, in each case based on then-available information. As such, as of any given date we could have exposure to losses under proceedings as to which no liability has been accrued or as to which the accrued liability is inadequate. Amounts accrued for our litigation and non-income tax contingencies at December 31, 2022 and December 31, 2021 aggregated to approximately \$88 million and \$103 million, respectively, and are included in other current liabilities, other liabilities, or liabilities held for sale in our consolidated balance sheets as of such dates. The establishment of an accrual does not mean that actual funds have been set aside to satisfy a given contingency. Thus, the resolution of a particular contingency for the amount accrued could have no effect on our results of operations but nonetheless could have an adverse effect on our cash flows.

In this Note, when we refer to a class action as "putative" it is because a class has been alleged, but not certified, in that matter.

Principal Proceedings

Shareholder Class Action Suit

Lumen and certain Lumen Board of Directors members and officers were named as defendants in a putative shareholder class action lawsuit filed on June 12, 2018 in the Boulder County District Court of the state of Colorado, captioned Houser et al. v. CenturyLink, et al. The complaint asserted claims on behalf of a putative class of former Level 3 shareholders who became CenturyLink, Inc. shareholders as a result of our acquisition of Level 3. It alleged that the proxy statement provided to the Level 3 shareholders failed to disclose various material information of several kinds, including information about strategic revenue, customer loss rates, and customer account issues, among other items. The complaint seeks damages, costs and fees, rescission, rescissory damages, and other equitable relief. In May 2020, the court dismissed the complaint. Plaintiffs appealed that decision, and in March 2022, the appellate court affirmed the district court's order in part and reversed it in part. It then remanded the case to the district court for further proceedings.

State Tax Suits

Since 2012, a number of Missouri municipalities have asserted claims in the Circuit Court of St. Louis County, Missouri, alleging that we and several of our subsidiaries have underpaid taxes. These municipalities are seeking, among other things, declaratory relief regarding the application of business license and gross receipts taxes and back taxes from 2007 to the present, plus penalties and interest. In a February 2017 ruling in connection with one of these pending cases, the court entered an order awarding the plaintiffs \$4 million and broadening the tax base on a going-forward basis. We appealed that decision to the Missouri Supreme Court. In December 2019, it affirmed the circuit court's order in some respects and reversed it in others, remanding the case to the circuit court for further proceedings. The Missouri Supreme Court's decision reduced our exposure in the case. In a June 2021 ruling in one of the pending cases, another trial court awarded the cities of Columbia and Joplin approximately \$55 million, plus statutory interest. On appeal, the Missouri Court of Appeals affirmed in part and reversed in part, vacated the judgment and remanded the case to the trial court with instructions for further proceedings consistent with the Missouri Supreme Court's decision. We continue to vigorously defend against these claims.

Billing Practices Suits

In June 2017, a former employee filed an employment lawsuit against us claiming that she was wrongfully terminated for alleging that we charged some of our retail customers for products and services they did not authorize. Thereafter, based in part on the allegations made by the former employee, several legal proceedings were filed, including consumer class actions in federal and state courts, a series of securities investor class actions in federal courts and several shareholder derivative actions in federal and Louisiana state courts. The derivative cases were brought on behalf of CenturyLink, Inc. against certain current and former officers and directors of the Company and seek damages for alleged breaches of fiduciary duties.

The consumer class actions, the securities investor class actions, and the federal derivative actions were transferred to the U.S. District Court for the District of Minnesota for coordinated and consolidated pretrial proceedings as In Re: CenturyLink Sales Practices and Securities Litigation. We have settled the consumer and securities investor class actions. Those settlements are final. The derivative actions remain pending.

We have engaged in discussions regarding related claims with a number of state attorneys general, and have entered into agreements settling certain of the consumer practices claims asserted by state attorneys general. While we do not agree with allegations raised in these matters, we have been willing to consider reasonable settlements where appropriate.

December 2018 Outage Proceedings

We experienced an outage on one of our transport networks that impacted voice, IP, 911, and transport services for some of our customers between the 27th and 29th of December 2018. We believe that the outage was caused by a faulty network management card from a third-party equipment vendor.

The FCC and four states (both Washington Utilities and Transportation Commission ("WUTC") and the Washington Attorney General; the Montana Public Service Commission; the Nebraska Public Service Commission; and the Wyoming Public Service Commission) initiated formal investigations. In November 2020, following the FCC's release of a public report on the outage, we negotiated a settlement which was released by the FCC in December 2020. The amount of the settlement was not material to our financial statements.

In December 2020, the Staff of the WUTC filed a complaint against us based on the December 2018 outage, seeking penalties owed for alleged violations of Washington regulations and laws. The matter was tried before the WUTC in December 2022 and we await a decision by the WUTC.

AT&T Proceedings

In August 2022, certain of our subsidiaries filed a complaint in federal district court in Colorado captioned Central Telephone Company of Virginia, et al, v. AT&T Corp., et al. The suit seeks relief and damages for AT&T's failure to pay amounts for services it receives. AT&T disputes those claims and has asserted counterclaims alleging breach of contract and seeking declaratory relief. It has requested the court to enjoin the plaintiffs from terminating services for failure to pay, and it has requested the court transfer the case to federal court in the southern district of New York for further proceedings. Also in August 2022, AT&T filed a separate lawsuit in federal court in the western district of Louisiana against Central Telephone Company of Virginia and other of our subsidiaries alleging, among other claims, breach of contract provisions pertaining to network architecture. The Lumen plaintiff entities dispute AT&T's claims.

Latin American Tax Litigation and Claims

In connection with the recent divestiture of our Latin American business, the purchaser assumed responsibility for the Peruvian tax litigation and Brazilian tax claims described in our prior periodic reports filed with the SEC. We have agreed to indemnify the purchaser for amounts paid in respect of the Brazilian tax claims. The value of this indemnification is included in the indemnification amount as disclosed in Note 14—Fair Value of Financial Instruments.

Other Proceedings, Disputes and Contingencies

From time to time, we are involved in other proceedings incidental to our business, including patent infringement allegations, regulatory hearings relating primarily to our rates or services, actions relating to employee claims, various tax issues, environmental law issues, grievance hearings before labor regulatory agencies and miscellaneous third-party tort actions or commercial disputes.

We are currently defending several patent infringement lawsuits asserted against us by non-practicing entities, many of which are seeking substantial recoveries. These cases have progressed to various stages and one or more may go to trial within the next twelve months if they are not otherwise resolved. Where applicable, we are seeking full or partial indemnification from our vendors and suppliers. As with all litigation, we are vigorously defending these actions and, as a matter of course, are prepared to litigate these matters to judgment, as well as to evaluate and consider all reasonable settlement opportunities.

We are subject to various foreign, federal, state and local environmental protection and health and safety laws. From time to time, we are subject to judicial and administrative proceedings brought by various governmental authorities under these laws. Several such proceedings are currently pending, but none is reasonably expected to exceed \$300,000 in fines and penalties.

The outcome of these other proceedings described under this heading is not predictable. However, based on current circumstances, we do not believe that the ultimate resolution of these other proceedings, after considering available defenses and any insurance coverage or indemnification rights, will have a material adverse effect on us.

The matters listed in this Note do not reflect all of our contingencies. The ultimate outcome of the above-described matters may differ materially from the outcomes anticipated, estimated, projected or implied by us in certain of our statements appearing above in this Note, and proceedings currently viewed as immaterial by us may ultimately materially impact us.

Right-of-Way

At December 31, 2022, our future rental commitments and Right-of-Way ("ROW") agreements were as follows:

	Future Rental Commitments and ROW Agreements	
	(Dollars in millions)	
2023	\$	183
2024		76
2025		66
2026		62
2027		60
2028 and thereafter		667
Total future minimum payments	\$	1,114

Purchase Commitments

We have several commitments primarily for marketing activities and support services from a variety of vendors to be used in the ordinary course of business totaling \$1.4 billion at December 31, 2022. Of this amount, we expect to purchase \$646 million in 2023, \$513 million in 2024 through 2025, \$90 million in 2026 through 2027 and \$153 million in 2028 and thereafter. These amounts do not represent our entire anticipated purchases in the future, but represent only those items for which we were contractually committed as of December 31, 2022.

Amounts included in the Right-of-Way table and in the purchase commitments disclosed above are inclusive of contractual obligations related to our EMEA business to be divested.

(19) Other Financial Information

Other Current Assets

The following table presents details of other current assets reflected in our consolidated balance sheets:

	As of December 31,	
	2022	2021
	(Dollars in millions)	
Prepaid expenses	\$ 319	295
Income tax receivable	—	22
Materials, supplies and inventory	236	96
Contract assets	20	45
Contract acquisition costs	123	142
Contract fulfillment costs	100	106
Note receivable	—	56
Receivable for sale of land	—	56
Other	5	11
Total other current assets ⁽¹⁾	<u>\$ 803</u>	<u>829</u>

⁽¹⁾ Excludes \$59 million of other current assets related to the EMEA business that were classified as held for sale as of December 31, 2022. Excludes \$126 million of other current assets related to the Latin American and ILEC businesses sold on August 1, 2022 and October 3, 2022, respectively, that were classified as held for sale as of December 31, 2021.

Included in accounts payable at December 31, 2022 and 2021 were \$265 million and \$248 million, respectively, associated with capital expenditures.

(20) Repurchases of Lumen Common Stock

Effective November 2, 2022, our Board of Directors authorized a new two-year program to repurchase up to an aggregate of \$1.5 billion of our outstanding common stock. During the year ended December 31, 2022, we repurchased under this program 33 million shares of our outstanding common stock in the open market for an aggregate market price of \$200 million, or an average purchase price of \$6.07 per share. All repurchased common stock has been retired. As a result, common stock and additional paid-in capital were reduced as of December 31, 2022 by \$33 million and \$167 million, respectively.

On August 3, 2021, our Board of Directors authorized a 24-month program to repurchase up to an aggregate of \$1.0 billion of our outstanding common stock. During the year ended December 31, 2021, we repurchased under this program 80.9 million shares of our outstanding common stock in the open market for an aggregate market price of \$1.0 billion, or an average purchase price of \$12.36 per share, thereby fully exhausting the program. All repurchased common stock has been retired. As a result, common stock and additional paid-in capital were reduced as of December 31, 2021 by \$81 million and \$919 million, respectively.

We expect repurchases made in 2023 and beyond to be subject to a non-deductible 1% excise tax on the fair market value of the stock under the Inflation Reduction Act of 2022.

(21) Accumulated Other Comprehensive Loss

Information Relating to 2022

The table below summarizes changes in accumulated other comprehensive loss recorded on our consolidated balance sheet by component for the year ended December 31, 2022:

	Pension Plans	Post-Retirement Benefit Plans	Foreign Currency Translation Adjustment and Other	Interest Rate Swap	Total
	(Dollars in millions)				
Balance at December 31, 2021	\$ (1,577)	(164)	(400)	(17)	(2,158)
Other comprehensive income (loss) before reclassifications	98	473	(134)	—	437
Amounts reclassified from accumulated other comprehensive loss	494	(1)	112	17	622
Net current-period other comprehensive income (loss)	592	472	(22)	17	1,059
Balance at December 31, 2022	\$ (985)	308	(422)	—	(1,099)

The table below presents further information about our reclassifications out of accumulated other comprehensive loss by component for the year ended December 31, 2022:

Year Ended December 31, 2022	Decrease (Increase) in Net Income	Affected Line Item in Consolidated Statement of Operations
	(Dollars in millions)	
Interest rate swaps	\$ 22	Interest expense
Income tax benefit	(5)	Income tax expense
Net of tax	\$ 17	
Amortization of pension & post-retirement plans ⁽¹⁾		
Net actuarial loss	\$ 121	Other income (expense), net
Prior service cost	(2)	Other income (expense), net
Reclassification of net actuarial loss and prior service credit to gain on the sale of business	539	Gain on sale of businesses
Total before tax	658	
Income tax benefit	(165)	Income tax expense
Net of tax	\$ 493	
Reclassification of realized loss on foreign currency translation to gain on the sale of business	\$ 112	Gain on sale of businesses
Income tax benefit	—	Income tax expense
Net of tax	\$ 112	

⁽¹⁾ See Note 11—Employee Benefits for additional information on our net periodic benefit (expense) income related to our pension and post-retirement plans.

Information Relating to 2021

The table below summarizes changes in accumulated other comprehensive loss recorded on our consolidated balance sheet by component for the year ended December 31, 2021:

	Pension Plans	Post-Retirement Benefit Plans	Foreign Currency Translation Adjustment and Other	Interest Rate Swap	Total
	(Dollars in millions)				
Balance at December 31, 2020	\$ (2,197)	(272)	(265)	(79)	(2,813)
Other comprehensive loss before reclassifications	197	94	(135)	(1)	155
Amounts reclassified from accumulated other comprehensive loss	423	14	—	63	500
Net current-period other comprehensive income (loss)	620	108	(135)	62	655
Balance at December 31, 2021	\$ (1,577)	(164)	(400)	(17)	(2,158)

The table below presents further information about our reclassifications out of accumulated other comprehensive loss by component for the year ended December 31, 2021:

Year Ended December 31, 2021	(Decrease) Increase in Net Loss	Affected Line Item in Consolidated Statement of Operations
	(Dollars in millions)	
Interest rate swap	\$ 83	Interest expense
Income tax benefit	(20)	Income tax expense
Net of tax	\$ 63	
Amortization of pension & post-retirement plans ⁽¹⁾		
Net actuarial loss	\$ 190	Other income (expense), net
Settlement charge	383	Other income (expense), net
Prior service cost	6	Other income (expense), net
Total before tax	579	
Income tax benefit	(142)	Income tax expense
Net of tax	\$ 437	

⁽¹⁾ See Note 11—Employee Benefits for additional information on our net periodic benefit (expense) income related to our pension and post-retirement plans.

(22) Labor Union Contracts

As of December 31, 2022, approximately 20% of our employees were represented by the Communication Workers of America ("CWA") or the International Brotherhood of Electrical Workers ("IBEW"). None of our collective bargaining agreements were in expired status as of December 31, 2022. Approximately 9% of our represented employees are subject to collective bargaining agreements that are scheduled to expire over the 12 month period ending December 31, 2023.

(23) Dividends

Our Board of Directors declared the following dividends payable in 2022 and 2021:

Date Declared	Record Date	Dividend Per Share	Total Amount	Payment Date
			(in millions)	
August 18, 2022	8/30/2022	\$ 0.25	\$ 253	9/9/2022
May 19, 2022	5/31/2022	0.25	253	6/10/2022
February 24, 2022	3/8/2022	0.25	253	3/18/2022
November 18, 2021	11/29/2021	0.25	251	12/10/2021
August 19, 2021	8/30/2021	0.25	264	9/10/2021
May 20, 2021	6/1/2021	0.25	272	6/11/2021
February 25, 2021	3/8/2021	0.25	276	3/19/2021

The declaration of dividends is solely at the discretion of our Board of Directors. On November 2, 2022, we announced that our Board had terminated our quarterly cash dividend program. Under this revised capital allocation policy, the company plans to continue to invest in growth initiatives.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES**Disclosure Controls and Procedures**

We maintain disclosure controls and procedures (as defined in Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934 (the "Exchange Act")) designed to provide reasonable assurance that the information required to be disclosed by us in the reports we file or furnish under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms. These include controls and procedures designed to ensure this information is accumulated and communicated to our senior management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. Management, with the participation of our President and Chief Executive Officer, Kate Johnson, and our Executive Vice President and Chief Financial Officer, Chris Stansbury, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2022. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded our disclosure controls and procedures were effective, as of December 31, 2022, in providing reasonable assurance the information required to be disclosed by us in this report was accumulated and communicated in the manner provided above.

Changes in Internal Control Over Financial Reporting

Other than the implementation of controls over accounting and reporting for the completed divestitures of our Latin American and ILEC businesses and the planned divestiture of our EMEA business, there have been no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) of the Exchange Act) that occurred during the fourth quarter of 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations of Internal Controls

The effectiveness of our or any system of disclosure controls and procedures is subject to certain limitations, including the exercise of judgment in designing, implementing and evaluating the controls and procedures, the assumptions used in identifying the likelihood of future events and the inability to eliminate misconduct completely. As a result, there can be no assurance that our disclosure controls and procedures will detect all errors or fraud. By their nature, our or any system of disclosure controls and procedures can provide only reasonable assurance regarding management's control objectives.

Internal Control Over Financial Reporting

Management's Report on Internal Control over Financial Reporting

Management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) of the Exchange Act), a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States. Under the supervision and with the participation of management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on our evaluation under the framework of COSO, management concluded that our internal control over financial reporting was effective at December 31, 2022. The effectiveness of our internal control over financial reporting at December 31, 2022 has been audited by KPMG LLP, as stated in their report entitled "Opinion on Internal Control Over Financial Reporting" appearing in Item 8, which is incorporated into this item by reference.

Management's Report on the Consolidated Financial Statements

Management has prepared and is responsible for the integrity and objectivity of our consolidated financial statements for the year ended December 31, 2022. The consolidated financial statements included in this report have been prepared in accordance with accounting principles generally accepted in the United States and necessarily include amounts determined using our best judgments and estimates.

Our consolidated financial statements have been audited by KPMG LLP, an independent registered public accounting firm, who have expressed an unqualified opinion on the consolidated financial statements. Their audit was conducted in accordance with standards of the Public Company Accounting Oversight Board (United States).

ITEM 9B. OTHER INFORMATION

Not applicable.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by Item 10 is incorporated by reference to the Proxy Statement.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 11 is incorporated by reference to the Proxy Statement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Equity Compensation Plan Information

The following table provides information as of December 31, 2022 about our equity compensation plans under which Common Shares are authorized for issuance:

	Number of securities to be issued upon exercise of outstanding options and rights (a)	Weighted-average exercise price of outstanding options and rights (b)	Number of securities remaining available for future issuance under plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by shareholders	16,264,108 ⁽¹⁾	\$ — ⁽²⁾	18,548,542
Equity compensation plans not approved by shareholders	—	—	—
Totals	16,264,108 ⁽¹⁾	\$ — ⁽²⁾	18,548,542

⁽¹⁾ These amounts represent restricted stock units, some of which represent the difference between the number of shares of restricted stock subject to market conditions granted at target and the maximum possible payout for these awards. Depending on performance, the actual share payout of these awards may range between 0-200% of target.

⁽²⁾ The amounts in column (a) represent restricted stock units, which do not have an exercise price.

The balance of the information required by Item 12 is incorporated by reference to the Proxy Statement.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by Item 13 is incorporated by reference to the Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by Item 14 is incorporated by reference to the Proxy Statement.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

Exhibits identified in parentheses below are on file with the SEC and are incorporated herein by reference. All other exhibits are provided as part of this electronic submission.

Exhibit Number	Description
2.1	Purchase Agreement, dated as of August 3, 2021, by and among Lumen Technologies, Inc., certain of its subsidiaries and Connect Holding LLC (incorporated by reference to Exhibit 2.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on August 4, 2021).
2.2*	Agreement, dated as of February 8, 2023, by and among certain affiliates of Lumen Technologies, Inc., and Colt Technology Services Group Limited.
3.1	Composite Articles of Incorporation of Lumen Technologies, Inc., as amended through January 22, 2021 (incorporated by reference to Exhibit 3.1 to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) for the year ended December 31, 2020 filed with the Securities and Exchange Commission on February 25, 2021).
3.2	Bylaws of Lumen Technologies, Inc., as amended and restated through January 22, 2021 (incorporated by reference to Exhibit 3.2 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on January 26, 2021).
4.1*	Description of Lumen Technologies, Inc.'s securities registered under Section 12 of the Securities Exchange Act of 1934, as amended.
4.2	Form of common stock certificate (incorporated by reference to Exhibit 4.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on January 26, 2021).
4.3	Amended and Restated Section 382 Rights Agreement by and between CenturyLink, Inc. and Computershare Trust Company, N.A., dated as of May 9, 2019 (incorporated by reference to Appendix C set forth in CenturyLink's Schedule 14A (File No. 001-07784) filed with the Securities and Exchange Commission on May 10, 2019).
	a. First Amendment to the Section 382 Rights Agreement by and between CenturyLink, Inc. and Computershare Trust Company, N.A., entered into on November 20, 2020, effective as of December 1, 2020 (incorporated by reference to Exhibit 4.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on November 25, 2020).
4.4	Instruments relating to CenturyLink, Inc.'s Senior Secured Credit Facilities.
	a. Restatement Agreement, dated as of January 31, 2020, by and among CenturyLink, Inc., as Borrower, Bank of America, N.A., as Administrative Agent and Collateral Agent, and the other lenders named therein (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on January 31, 2020).
	b. Amended and Restated Credit Agreement, dated as of January 31, 2020, by and among CenturyLink, Inc., as Borrower, Bank of America, N.A. as Administrative Agent and Collateral Agent, and the other lenders, agents, arrangers and bookrunners named therein (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on January 31, 2020).
4.5	Instruments relating to CenturyLink, Inc.'s public senior debt. ⁽¹⁾
	a. Indenture, dated as of March 31, 1994, by and between Century Telephone Enterprises, Inc. (currently named CenturyLink, Inc.) and Regions Bank (successor-in-interest to First American Bank & Trust of Louisiana), as Trustee (incorporated by reference to Exhibit 4.4(a) to CenturyLink's Annual Report on Form 10-K (File No. 001-07784) for the year ended December 31, 2014 filed with the Securities and Exchange Commission on February 24, 2015).

Exhibit Number	Description
	(i). Form of 7.2% Senior Notes, Series D, due 2025 (incorporated by reference to Exhibit 4.27 to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 1995 (File No. 001-07784) filed with the Securities and Exchange Commission on March 18, 1996).
	(ii). Form of 6.875% Debentures, Series G, due 2028, (incorporated by reference to Exhibit 4.9 to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 1997 (File No. 001-07784) filed with the Securities and Exchange Commission on March 16, 1998).
	(iii). Fifth Supplemental Indenture, dated as of September 21, 2009, by and between CenturyTel, Inc. (currently named CenturyLink, Inc.) and Regions Bank, as Trustee, designating and outlining the terms and conditions of CenturyLink's 7.60% Senior Notes, Series P, due 2039 (incorporated by reference to Exhibit 4.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on September 22, 2009).
	(iv). Seventh Supplemental Indenture, dated as of March 12, 2012, by and between CenturyLink, Inc. and Regions Bank, as Trustee, designating and outlining the terms and conditions of CenturyLink's 7.65% Senior Notes, Series U, due 2042 (incorporated by reference to Exhibit 4.1 to CenturyLink's Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on March 12, 2012).
	(v). Tenth Supplemental Indenture, dated as of March 19, 2015, by and between CenturyLink, Inc. and Regions Bank, as Trustee, designating and outlining the terms and conditions of CenturyLink's 5.625% Senior Notes, Series X, due 2025 (incorporated by reference to Exhibit 4.2 to CenturyLink's Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on March 19, 2015).
b.	Indenture, dated December 16, 2019, between CenturyLink, Inc. and Regions Bank, as Trustee (incorporated by reference to Exhibit 4.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on December 16, 2019).
	(i). First Supplemental Indenture, dated December 16, 2019, between CenturyLink, Inc. and Regions Bank, as Trustee, designating and outlining the terms and conditions of CenturyLink's 5.125% Senior Notes due 2026 (incorporated by reference to Exhibit 4.2 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on December 16, 2019).
c.	Indenture, dated January 24, 2020, between CenturyLink, Inc. and Wells Fargo Bank, National Association, as Trustee and Notes Collateral Agent, designating and outlining the terms and conditions of CenturyLink's 4.000% Senior Secured Notes due 2027 (incorporated by reference to Exhibit 4.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on January 24, 2020).
d.	Indenture, dated November 27, 2020, among Lumen Technologies, Inc.'s, as Issuer, and Regions Bank, as Trustee, designating and outlining the terms and conditions of Lumen Technologies, Inc. 4.500% Senior Notes due 2029 (incorporated by reference to Exhibit 4.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) dated November 27, 2020).
e.	Indenture, dated June 15, 2021, among Lumen Technologies, Inc., as issuer, and Regions Bank, as trustee, relating to the issuance of Lumen Technologies, Inc.'s 5.375% Senior Notes due 2029 (incorporated by reference to Exhibit 4.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on June 15, 2021).
4.6	Instruments relating to indebtedness of subsidiaries of Qwest Communications International, Inc. ⁽¹⁾
a.	Indenture, dated as of April 15, 1990, by and between The Mountain States Telephone and Telegraph Company (currently named Qwest Corporation) and The First National Bank of Chicago, under which Qwest Corporation's 7.375% Notes due 2030 were issued (incorporated by reference to Exhibit 4.2 to Qwest Corporation's Annual Report on Form 10-K for the year ended December 31, 2002 (File No. 001-03040) filed with the Securities and Exchange Commission on January 13, 2004).

Exhibit Number	Description
(i).	First Supplemental Indenture, dated as of April 16, 1991, by and between U S WEST Communications, Inc. (currently named Qwest Corporation) and The First National Bank of Chicago (incorporated by reference to Exhibit 4.3 to Qwest Corporation's Annual Report on Form 10-K for the year ended December 31, 2002 (File No. 001-03040) filed with the Securities and Exchange Commission on January 13, 2004).
b.	Indenture, dated as of April 15, 1990, by and between Northwestern Bell Telephone Company (predecessor to Qwest Corporation) and The First National Bank of Chicago, under which Qwest Corporation's 7.250% Notes due 2025 and 7.750% Notes due 2030 were issued (incorporated by reference to Exhibit 4.5(b) to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended March 31, 2012 (File No. 001-07784) filed with the Securities and Exchange Commission on May 10, 2012).
(i).	First Supplemental Indenture, dated as of April 16, 1991, by and between U S WEST Communications, Inc. (currently named Qwest Corporation) and The First National Bank of Chicago (incorporated by reference to Exhibit 4.3 to Qwest Corporation's Annual Report on Form 10-K for the year ended December 31, 2002 (File No. 001-03040) filed with the Securities and Exchange Commission on January 13, 2004).
c.	Indenture, dated as of June 29, 1998, by and among U S WEST Capital Funding, Inc. (currently named Qwest Capital Funding, Inc.), U S WEST, Inc. (predecessor to Qwest Communications International Inc.) and The First National Bank of Chicago, as trustee (incorporated by reference to Exhibit 4(a) to U S WEST, Inc.'s Current Report on Form 8-K (File No. 001-14087) filed with the Securities and Exchange Commission on November 18, 1998).
(i).	First Supplemental Indenture, dated as of June 30, 2000, by and among U S WEST Capital Funding, Inc. (currently named Qwest Capital Funding, Inc.), U S WEST, Inc. (predecessor to Qwest Communications International Inc.) and Bank One Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.10 to Qwest Communications International Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2000 (File No. 001-15577) filed with the Securities and Exchange Commission on August 11, 2000).
d.	Indenture, dated as of October 15, 1999, by and between US West Communications, Inc. (currently named Qwest Corporation) and Bank One Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4(b) to Qwest Corporation's Annual Report on Form 10-K for the year ended December 31, 1999 (File No. 001-03040) filed with the Securities and Exchange Commission on March 3, 2000).
(i).	Sixteenth Supplemental Indenture, dated as of August 22, 2016, by and between Qwest Corporation and U.S. Bank National Association, designating and outlining the terms and conditions of Qwest 6.500% Notes due 2056 (incorporated by reference to Exhibit 4.17 to Qwest Corporation's Form 8-A (File No. 001-03040) filed with Securities and Exchange Commission on August 22, 2016).
(ii).	Seventeenth Supplemental Indenture dated as of April 27, 2017, by and between Qwest Corporation and U.S. Bank National Association, designating and outlining the terms and conditions of Qwest Corporation's 6.750% Notes due 2057 (incorporated by reference to Exhibit 4.18 to Qwest Corporation's Form 8-A (File No. 03040) filed with the Securities and Exchange Commission on April 27, 2017).
e.	Amended and Restated Credit Agreement, dated as of October 23, 2020, by and among Qwest Corporation, the several lenders from time to time parties thereto, and CoBank, ACB, as administrative agent (incorporated by reference to Exhibit 4.6(e) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) for the year ended December 31, 2020 filed with the Securities and Exchange Commission on February 25, 2021).
4.7	Instruments relating to indebtedness of Level 3 Communications, Inc. and its subsidiaries. ⁽¹⁾
a.	Indenture, dated as of September 25, 2019, among Level 3 Parent, LLC, as Guarantor, Level 3 Financing, Inc., as Issuer, and the Bank of New York Mellon Trust Company, N.A., as Trustee, relating to the 4.625% Senior Notes due 2027 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 99.1 to Level 3 Parent, LLC's Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on September 26, 2019).

Exhibit Number	Description
(i).	<u>First Supplemental Indenture, dated as of March 2, 2020, among Level 3 Parent LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, designating and outlining the terms and conditions of Level 3 Communications, LLC's unsecured guarantee of the 4.625% Senior Notes due 2027 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.8(d)(i) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) for the year ended December 31, 2020 filed with the Securities and Exchange Commission on February 25, 2021).</u>
(ii).	<u>Second Supplemental Indenture, dated as of March 2, 2020, among Level 3 Parent LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to the subordination in any bankruptcy, liquidation or winding up proceeding of the guarantee by Level 3 Communications, LLC of the 4.625% Senior Notes due 2027 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.8(d)(ii) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) for the year ended December 31, 2020 filed with the Securities and Exchange Commission on February 25, 2021).</u>
b.	<u>Indenture, dated as of November 29, 2019, among Level 3 Parent, LLC and the other guarantors party thereto, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee and Notes Collateral Agent, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 3.400% Senior Secured Notes due 2027 (incorporated by reference to Exhibit 10.2 to Level 3 Parent, LLC's Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on December 4, 2019).</u>
(i).	<u>Supplemental Indenture, dated as of April 15, 2020, among Level 3 Financing, Inc., as issuer, The Bank of New York Mellon Trust Company, N.A., as trustee, and Level 3 Parent, LLC and several of its subsidiaries, as guarantors, designating and outlining the terms and conditions of the secured guarantees of the 3.400% Senior Secured Notes due 2027 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.8(e)(i) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) for the year ended December 31, 2020 filed with the Securities and Exchange Commission on February 25, 2021).</u>
c.	<u>Indenture, dated as of November 29, 2019, among Level 3 Parent, LLC and the other guarantors party thereto, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee and Notes Collateral Agent, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 3.875% Senior Secured Notes due 2029 (incorporated by reference to Exhibit 10.3 to Level 3 Parent, LLC's Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on December 4, 2019).</u>
(i).	<u>Supplemental Indenture, dated as of April 15, 2020, among Level 3 Financing, Inc., as issuer, The Bank of New York Mellon Trust Company, N.A., as trustee, and Level 3 Parent, LLC and several of its subsidiaries, as guarantors, designating and outlining the terms and conditions of the secured guarantees of the 3.875% Senior Secured Notes due 2029 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.8(f)(i) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) for the year ended December 31, 2020 filed with the Securities and Exchange Commission on February 25, 2021).</u>
d.	<u>Indenture, dated as of June 15, 2020, among Level 3 Parent, LLC, as Guarantor, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee, relating to the 4.250% Senior Notes due 2028 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on June 15, 2020).</u>

Exhibit Number	Description
(i).	First Supplemental Indenture, dated as of December 21, 2020, among Level 3 Parent LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, designating and outlining the terms and conditions of Level 3 Communications, LLC's unsecured guarantee of the 4.250% Senior Notes due 2028 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.8(g)(i) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) for the year ended December 31, 2020 filed with the Securities and Exchange Commission on February 25, 2021).
(ii).	Second Supplemental Indenture, dated as of December 21, 2020, among Level 3 Parent LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to the subordination in any bankruptcy, liquidation or winding up proceeding of the guarantee by Level 3 Communications, LLC of the 4.250% Senior Notes due 2028 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.8(g)(ii) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) for the year ended December 31, 2020 filed with the Securities and Exchange Commission on February 25, 2021).
e.	Indenture, dated August 12, 2020, among Level 3 Parent, LLC, as Guarantor, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee, relating to the 3.625% Senior Notes due 2029 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on August 12, 2020).
(i).	First Supplemental Indenture, dated as of December 21, 2020, among Level 3 Parent LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, designating and outlining the terms and conditions of Level 3 Communications, LLC's unsecured guarantee of the 3.625% Senior Notes due 2029 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.8(h)(i) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) for the year ended December 31, 2020 filed with the Securities and Exchange Commission on February 25, 2021).
(ii).	Second Supplemental Indenture, dated as of December 21, 2020, among Level 3 Parent LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to the subordination in any bankruptcy, liquidation or winding up proceeding of the guarantee by Level 3 Communications, LLC of the 3.625% Senior Notes due 2029 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.8(h)(ii) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) for the year ended December 31, 2020 filed with the Securities and Exchange Commission on February 25, 2021).
f.	Indenture, dated January 13, 2021, among Level 3 Parent, LLC, as Guarantor, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee, relating to the 3.750% Sustainability-Linked Senior Notes due 2029 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on January 13, 2021).
(i).	First Supplemental Indenture, dated as of May 7, 2021, among Level 3 Parent, LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, designating and outlining the terms and conditions of Level 3 Communications, LLC's unsecured guarantee of the 3.750% Sustainability-Linked Senior Notes due 2029 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.8(h)(i) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) filed with the Securities and Exchange Commission on February 24, 2022).

Exhibit Number	Description
(ii).	Second Supplemental Indenture, dated as of May 7, 2021, among Level 3 Parent, LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to the subordination in any bankruptcy, liquidation or winding up proceeding of the guarantee by Level 3 Communications, LLC of the 3.750% Sustainability-Linked Senior Notes due 2029 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.8(h)(ii) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) filed with the Securities and Exchange Commission on February 24, 2022).
g.	Thirteenth Amendment Agreement to the Amended and Restated Credit Agreement, dated as of November 29, 2019, by and between Level 3 Parent, LLC, Level 3 Financing, Inc., the Lenders party thereto and Merrill Lynch Capital Corporation (incorporated by reference to Exhibit 10.1 to Level 3 Parent, LLC's Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on December 4, 2019).
10.1+	CenturyLink 2011 Equity Incentive Plan, as amended through May 18, 2016 (incorporated by reference to Appendix A of CenturyLink, Inc.'s Proxy Statement dated April 1, 2016 as filed with the Securities and Exchange Commission on Schedule 14A (File No. 001-07784)).
(i).	Form of Restricted Stock Agreement for annual time-based equity grants to certain executive officers in 2018 (not including Jeffrey K. Storey) (incorporated by reference to Exhibit 10.1(v) to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018 (File No. 001-07784) filed with the Securities and Exchange Commission on March 11, 2019).
10.2+	Amended and Restated Lumen Technologies, Inc. 2018 Equity Incentive Plan (incorporated by reference to Exhibit 10.1 to Lumen Technologies, Inc.'s Quarterly Report on Form 10-Q (File No. 001-07784) filed with the Securities and Exchange Commission on November 5, 2020).
(i).	Form of Restricted Stock Agreement for annual equity grants to non-management directors beginning in 2018 (incorporated by reference to Exhibit 10.1A to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2018 (File No. 001-07784) filed with the Securities and Exchange Commission on August 9, 2018).
(ii)	Form of RSU Agreement for annual time-based equity grants to Jeffrey K. Storey (incorporated by reference to Exhibit 10.2(vi) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) filed with the Securities and Exchange Commission on February 24, 2022).
(iii)	Form of RSU Agreement for annual performance-based equity grants to Jeffrey K. Storey (incorporated by reference to Exhibit 10.2(vii) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) filed with the Securities and Exchange Commission on February 24, 2022).
(iv)	Form of Restricted Stock Agreement for annual time-based equity grants to certain executive officers (other than Jeffrey K. Storey) (incorporated by reference to Exhibit 10.2(viii) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) filed with the Securities and Exchange Commission on February 24, 2022).
(v)	Form of Restricted Stock Agreement for annual performance-based equity grants to certain executive officers (other than Jeffrey K. Storey) (incorporated by reference to Exhibit 10.2(ix) to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) filed with the Securities and Exchange Commission on February 24, 2022).
(vi)*	Form of Restricted Stock Agreement for annual time-based equity grants to Kate Johnson
(vii)*	Restricted Stock Agreement for sign-on time-based award to Kate Johnson on November 7, 2022.
10.3+	Supplemental Dollars & Sense Plan, 2014 Restatement, effective January 1, 2014 (incorporated by reference to Exhibit 10.3 to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018 (File No. 001-07784) filed with the Securities and Exchange Commission on March 11, 2019).
10.4+	Supplemental Defined Benefit Pension Plan, effective as of January 1, 2012 (incorporated by reference to Exhibit 10.5 to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2011 (File No. 001-07784) filed with the Securities and Exchange Commission on February 28, 2012).

Exhibit Number	Description
10.5+*	Lumen Technologies, Inc. Short-Term Incentive Plan - Annual.
10.6+	Form of Indemnification Agreement entered into between CenturyLink, Inc. and each of its directors as of February 24, 2016 (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on February 29, 2016).
10.7+	Form of Indemnification Agreement entered into between CenturyLink, Inc. and each of its officers as of February 24, 2016 (incorporated by reference to Exhibit 10.2 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on February 29, 2016).
10.8+*	Change of Control Agreement, by and between Kate Johnson and Lumen Technologies, Inc
10.9+	Form of Change of Control Agreement, effective January 1, 2011 between CenturyLink, Inc. and each of its other executive officers (incorporated by reference to Exhibit 10.12 to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2010 (File No. 001-07784) filed with the Securities and Exchange Commission on March 1, 2011).
10.10+	Amended and Restated Lumen Executive Severance Plan, effective October 10, 2017 (with updated exhibits and branding as of October 2020) (incorporated by reference to Exhibit 10.11 to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) filed with the Securities and Exchange Commission on February 24, 2022).
10.11+	Amended and Restated CenturyLink, Inc. Bonus Life Insurance Plan for Executive Officers, dated as of April 3, 2008 (incorporated by reference to Exhibit 10.4 to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended March 31, 2008 (File No. 001-07784) filed with the Securities and Exchange Commission on May 7, 2008) and First Amendment thereto (incorporated by reference to Exhibit 10.13 to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended September 30, 2010 (File No. 001-07784) filed with the Securities and Exchange Commission on November 5, 2010).
10.12+	Offer letter between CenturyLink, Inc. and Jeffrey K. Storey, effective May 23, 2018 (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784), filed with the Securities and Exchange Commission on May 25, 2018, which amended, restated and superseded the offer letter between CenturyLink, Inc. and Jeffrey K. Storey, effective April 27, 2017 (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on November 1, 2017).
10.13+	Offer letter between CenturyLink, Inc. and Indraneel Dev, effective November 6, 2018 (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on November 7, 2018).
10.14+	Offer Letter dated September 12, 2022 between Lumen Technologies, Inc. and Kate Johnson (incorporated by reference to Exhibit 10.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on September 13, 2022).
10.15+	Offer Letter dated March 24, 2022 between Lumen Technologies, Inc. and Christopher D. Stansbury (incorporated by reference to Exhibit 10.1 to Lumen Technologies, Inc.'s Quarterly Report on Form 10-Q for the period ended March 31, 2022 (File No. 001-07784) filed with the Securities and Exchange Commission on May 4, 2022).
10.16+	Lumen Supplemental Savings Plan, as amended and restated (incorporated by reference to Exhibit 10.2 to Lumen Technologies, Inc.'s Quarterly Report on Form 10-Q for the period ended March 31, 2022 (File No. 001-07784) filed with the Securities and Exchange Commission on May 4, 2022).
10.17+	Lumen Non-Employee Director Deferred Compensation Plan, effective April 18, 2019 (updated for branding as of October 2020) (incorporated by reference to Exhibit 10.15 to Lumen Technologies, Inc.'s Annual Report on Form 10-K (File No. 001-07784) filed with the Securities and Exchange Commission on February 24, 2022).

Exhibit Number	Description
10.18+	Legacy Qwest Deferred Compensation Plan for Nonemployee Directors, as amended and restated, Amendment to Deferred Compensation Plan for Nonemployee Directors (incorporated by reference to Exhibit 10.2 to Qwest Communications International Inc.'s Current Report on Form 8-K (File No. 001-15577) filed with the Securities and Exchange Commission on December 16, 2005 and Exhibit 10.8 to Qwest Communication International Inc.'s Quarterly Report on Form 10-Q for the period ended September 30, 2008 (File No. 001-15577) filed with the Securities and Exchange Commission on October 29, 2008) and Amendment No. 2011-1 to Deferred Compensation Plan for Nonemployee Directors (incorporated by reference to Exhibit 10.15(c) to CenturyLink, Inc.'s Annual Report for the year ended December 31, 2011 (File No. 001-07784) filed with the Securities and Exchange Commission on February 28, 2012).
10.19+*	Retention Letter between Lumen Technologies, Inc. and Shaun Andrews, dated December 9, 2022
10.20+*	Retention Letter between Lumen Technologies, Inc. and Stacey Goff, dated December 9, 2022
21*	Subsidiaries of Lumen Technologies, Inc.
23*	Independent Registered Public Accounting Firm Consent.
31.1*	Certification of the Chief Executive Officer of Lumen Technologies, Inc. furnished pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of the Chief Financial Officer of Lumen Technologies, Inc. furnished pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of the Chief Executive Officer of Lumen Technologies, Inc. pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2*	Certification of the Chief Financial Officer of Lumen Technologies, Inc. pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101*	Financial statements from the annual report on Form 10-K of Lumen Technologies, Inc. for the period ended December 31, 2022, formatted in Inline XBRL: (i) the Consolidated Statements of Operations, (ii) the Consolidated Statements of Comprehensive (Loss) Income, (iii) the Consolidated Balance Sheets, (iv) the Consolidated Statements of Cash Flows, (v) the Consolidated Statements of Stockholders' Equity and (vi) the Notes to Consolidated Financial Statements.
104*	Cover page formatted as Inline XBRL and contained in Exhibit 101.

* Exhibit filed herewith.

+ Indicates a management contract or compensatory plan or arrangement.

(1) Certain of the items in Sections 4.5, 4.6 and 4.7 (i) omit supplemental indentures or other instruments governing debt that has been retired, or (ii) refer to trustees who may have been replaced, acquired or affected by similar changes. In accordance with applicable rules of the SEC, copies of certain instruments defining the rights of holders of certain of our long-term debt are not filed herewith. Additional documentation regarding the credit agreement of Level 3 Parent, LLC and its affiliates is available in reports filed by Level 3 Parent, LLC with the Securities and Exchange Commission.

ITEM 16. SUMMARY OF BUSINESS AND FINANCIAL INFORMATION

Not applicable.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this annual report to be signed on its behalf by the undersigned thereunto duly authorized.

Date: February 23, 2023

By: Lumen Technologies, Inc.
/s/ Andrea Genschaw
Andrea Genschaw
Senior Vice President, Controller (*Principal Accounting Officer*)

Pursuant to the requirements of the Securities Exchange Act of 1934, this annual report has been signed below by the following persons on behalf of the registrant and in the capacities and on the date indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
/s/ Kate Johnson Kate Johnson	President and Chief Executive Officer	February 23, 2023
/s/ T. Michael Glenn T. Michael Glenn	Non-Executive Chairman of the Board	February 23, 2023
/s/ W. Bruce Hanks W. Bruce Hanks	Non-Executive Vice Chairman of the Board	February 23, 2023
/s/ Chris Stansbury Chris Stansbury	Executive Vice President and Chief Financial Officer	February 23, 2023
/s/ Andrea Genschaw Andrea Genschaw	Senior Vice President, Controller (Principal Accounting Officer)	February 23, 2023
/s/ Quincy L. Allen Quincy L. Allen	Director	February 23, 2023
/s/ Martha Helena Bejar Martha Helena Bejar	Director	February 23, 2023
/s/ Peter C. Brown Peter C. Brown	Director	February 23, 2023
/s/ Kevin P. Chilton Kevin P. Chilton	Director	February 23, 2023
/s/ Steven T. "Terry" Clontz Steven T. "Terry" Clontz	Director	February 23, 2023
/s/ Hal Stanley Jones Hal Stanley Jones	Director	February 23, 2023
/s/ Michael Roberts Michael Roberts	Director	February 23, 2023
/s/ Laurie Siegel Laurie Siegel	Director	February 23, 2023

DATED 8 February 2023
GLOBAL CROSSING TELECOMMUNICATIONS, INC.
LEVEL 3 INTERNATIONAL SERVICES, INC.
LEVEL 3 INTERNATIONAL, INC. and
CENTURYLINK COMMUNICATIONS, LLC
as Sellers

LEVEL 3 PARENT, LLC
as Sellers' Guarantor

COLT TECHNOLOGY SERVICES GROUP LIMITED
as Buyer
AGREEMENT

for the sale and purchase of the share capital of the companies listed in Schedule 1

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Documents in the agreed form

Power of attorney and proxy

Board Resignations

Sellers' confirmation and waiver letter

Share transfer forms in relation to the Shares

Tax Deed

Transitional Services Agreement

Lumen Master Services Agreement

Merlin Master Services Agreement

IP Licence

DATED _____ 2023

PARTIES

- (1) **GLOBAL CROSSING TELECOMMUNICATIONS, INC.**, a corporation formed in the State of Delaware, United States with company number 2330300 whose registered office is at c/o The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware 19801 United States of America ("GCT")
- (2) **LEVEL 3 INTERNATIONAL SERVICES, INC.**, a corporation formed in the State of Delaware, United States with company number 2887924 whose registered office is at c/o The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware 19801 United States of America ("L3IS")
- (3) **LEVEL 3 INTERNATIONAL, INC.**, a corporation formed in the State of Delaware, United States with company number 2921813 whose registered office is at c/o The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware 19801 United States of America ("L3I")
- (4) **CENTURYLINK COMMUNICATIONS, LLC**, a limited liability company formed in the State of Delaware, United States with company number 642301 whose registered office is at c/o The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware 19801 United States of America ("CCL" and together with GCT, L3IS and L3I, the "Sellers", and "Seller" means any one of them)
- (5) **LEVEL 3 PARENT, LLC**, a corporation formed in the State of Delaware, United States with company number 6195280 whose registered office is at 1025 Eldorado Blvd Broomfield, Colorado 80021 United States (the "Sellers' Guarantor")
- (6) **COLT TECHNOLOGY SERVICES GROUP LIMITED**, a company incorporated in England with registered number 03232904 whose registered office is at Colt House, 20 Great Eastern Street, London, England, EC2A 3EH (the "Buyer")

BACKGROUND

- (A) The Sellers have agreed to sell and the Buyer has agreed to buy the Business (through the acquisition of the entire issued share capital in the Transferring Companies) on the terms set out this Agreement and the related Transaction Documents.
- (B) The Sellers' Guarantor has agreed to guarantee the performance of the Sellers' obligations under this Agreement and the other Transaction Documents.

OPERATIVE PROVISIONS

1 DEFINITIONS AND INTERPRETATION

1.1 In this Agreement:

"Accounts" means the unaudited condensed balance sheets and income statements of the Transferring Companies and the Business for the accounting period as of and ended on the Accounts Date, prepared in accordance with Relevant Accounting Standards and subject to the Specific Accounts Qualifications in the agreed form.

"Accounts Date" means 31 December 2021.

"Accountants" means a firm of internationally recognized independent public accountants with significant experience related to purchase price adjustment disputes with respect to transactions similar to the Transaction agreed upon by the Buyer and the Sellers in writing (and if not so agreed within 30 Business Days of the Sellers' Representative notifying the Buyer or the Buyer notifying the Sellers' Representative of their wish to appoint an independent firm, the Accountants shall be an accounting firm of national standing designated by the American Institute of

Certified Public Accountants on application of either the Buyer or the Sellers' Representative).

"Allocation Statement" is defined in Clause 6.7(d).

"Appointer" is defined in Clause 29.3.

"Associate" means in relation to an undertaking, that undertaking and its subsidiary undertakings and parent undertakings and all subsidiary undertakings of any such parent undertakings.

"Assumed Liabilities" is defined in Clause 6.3(f).

"Audited Accounts" is defined in Clause 6.6(a).

"Authority" means a supra-national, national, state, municipal or local authority (including any court, tax authority, subdivision, administrative agency or commission), or any arbitral tribunal or quasi-governmental or private body exercising any regulatory, taxing, importing or other governmental or quasi-governmental authority in any jurisdiction, (including any tribunal, securities exchange, competition or antitrust authority, or supervisory body) including the European Union.

"Budgeted Capital Expenditures" means the aggregate amount of Capital Expenditures budgeted for the period between October 1, 2022 and the Effective Time set forth in Schedule 7 (*Completion Statements*) as prorated for any Effective Time that occurs prior to the end of any applicable quarter period set forth on this schedule based on the number of days elapsed in such quarter through (and including) the Effective Time relative to the total number of days in such quarter.

"Business" means the electronic communications and network services business of the Sellers' Group in EMEA consistent with past practice at the date of the Put Option Agreement (excluding, for the avoidance of doubt, the Excluded Business), which includes: provision of telecommunications infrastructure and enterprise services to customers in EMEA; the entire electronic communications and network services business provided in EMEA utilising the subsea cables and cable landing stations (identified in the Transaction Perimeter Summary) and utilising the US Assets.

"Business Day" means a day (other than a Saturday or Sunday) on which the clearing banks in Louisiana, USA, Colorado, USA and London, UK are open for business.

"Buyer Customer" means collectively one or more relevant members of the Buyer's Group receiving services from the Lumen Service Provider under the Lumen Master Services Agreement.

"Buyer's Group" means the Buyer and any Associate of it from time to time (including immediately following Completion each Transferring Company) but for the avoidance of doubt shall not include any parent company (or any other subsidiary of such parent company) of Colt Group Holdings Limited.

"Buyer Service Provider" means collectively one or more relevant members of the Buyer's Group providing services to the Lumen Customer under the Merlin Master Services Agreement.

"Buyer's Solicitors" means Baker & McKenzie LLP of 100 New Bridge Street, London, EC4V 6JA.

"Capital Expenditures" shall mean capital expenses, as defined and calculated consistent with the same Relevant Accounting Standards, procedures, categorizations, definitions, methods, practices and techniques as adopted and applied in the Accounts, incurred to acquire, maintain or upgrade Transferred Assets used in the operations of the Business. Capital Expenditures shall exclude customer funded IRU capital expenditures included in respect of the IRU Capex Projects, Business funded IRU renewals, and growth initiative capital expenditures.

"Capital Expenditures Amount" means the sum (without duplication) of (i) Capital Expenditures both incurred and paid between October 1, 2022 and the Effective Time (inclusive of such dates), and (ii) Capital Expenditures incurred but not paid and reflected as a current liability in Working Capital, by the Business between October 1, 2022 and the Effective Time (inclusive of such dates).

"Cash" means the aggregate amount of cash and cash equivalents (including any interest incurred) held by a Transferring Company with banks or financial institutions at the Effective Time to the extent such Cash is freely available to be lent or distributed outside the Transferring Companies, or spent by the Transferring Companies in the ordinary course of business (including for these purposes the settlement or discharge of any liability that is included in Debt or Working Capital) and is fully reconciled to bank statements, in each case at the Effective Time, together with Intercompany Receivables, but excluding rent deposits and any cash collateral in respect of bank or other guarantees provided to third parties in each case as set out in the Completion Statement prepared in accordance with Schedule 7, Part 1 (*Preparation of Completion Statements*) and Schedule 7, Part 2 (*Contents of Completion Statements*).

"CenturyLink Europe" means CenturyLink Europe, B.V., details of which are in Schedule 1, Part 1 (*Details of CenturyLink Europe*).

"CFIUS" means the Committee on Foreign Investment in the United States.

"CFIUS Clearance" means that: (a) (i) the Parties have received written notice from CFIUS that the 45-day review period and further investigation period (if any) pursuant to the DPA of the Transaction has been concluded; and (ii) CFIUS has determined that there are no unresolved national security concerns with respect to the Transaction and advised that action pursuant to the DPA, and any investigation related thereto, has been concluded with respect to such Transaction; (b) the Parties have received written notice from CFIUS that CFIUS has concluded that the Transactions are not "covered transactions" pursuant to the DPA and not subject to review under applicable Law; or (c) CFIUS has sent a report to the President of the United States requesting the President's decision on the CFIUS notice submitted by the Parties and either (x) the period pursuant to the DPA during which the President may announce his decision to take action to suspend, prohibit or place any limitations on the Transaction has expired without any such action being threatened, announced or taken; or (y) the President of the United States has announced a decision not to take any action to suspend, prohibit or place any limitations on the Transaction.

"CFIUS Condition" is defined in Clause 5.1.

"Claim" means any claim under this Agreement other than pursuant to Clause 4 (*Adjustments to Consideration*).

"CMA" means the UK Competition & Markets Authority.

"Code" means the U.S. Internal Revenue Code.

"Commitment Letter" a letter from FMR LLC to (i) Colt Group Holdings Limited, (ii) Colt Avengers Limited, (iii) Colt Lux Group Holding S.à r.l. and (iv) the Buyer setting out the terms and conditions on which FMR LLC will arrange and underwrite: (i) USD1,900,000,000 senior secured term loan facility, and (ii) USD500,000,000 senior secured revolving credit facility.

"Competition Conditions" means the Conditions set out at Clause 5.1(a).

"Completion" means completion of the purchase of the Shares in accordance with Clause 7 (*Completion*).

"Completion Payments Notice" has the meaning given to it in Clause 3.2.

"Completion Statements" means the combined balance sheet of the Transferring Companies prepared and agreed or determined in accordance with Schedule 7 (*Completion Statements*) in order to determine Net Debt and Working Capital.

"Condition" means a condition of Completion as specified in Clause 5.1 (and together, the **"Conditions"**).

"Confidential Information" means customer details, prices and quantities and other information of a confidential nature (including all proprietary, industrial and commercial information and techniques in whatever form held, such as paper, electronically stored data, magnetic media film and microfilm or orally) and all unpatented, secret (that is, not generally known or easily accessible), substantial (that is, significant and useful for production) and identified (that is, described in a sufficiently comprehensive manner so as to make it possible to verify that it fulfils the criteria of secrecy and substantiality) know-how, expertise, technical or other information developed or acquired by any person including all related ideas, concepts, methods, inventions, discoveries, data, formulae, processes, methods, techniques and specification.

"Contract" means any agreement or commitment whether conditional or unconditional and whether by deed, under hand, oral or otherwise, in each case which is legally binding.

"Consideration" has the meaning given in Clause 3.1.

"Data Room" means the contents of the virtual data room (including all responses to Q&A, RFQs or other due diligence questions raised by the Buyer which are contained therein) hosted by Donnelley Financial Solutions in respect of Project Merlin containing the documents listed in the index attached to the Disclosure Letter.

"Debt" means the aggregate amount of the Intercompany Payables (including any dividends and distributions payable to the Sellers' Group after the Effective Time) and any other indebtedness in the nature of borrowings of the Transferring Companies and the Business, (including by way of loan stocks, bonds, interest rate swaps, or derivative financial instruments, debentures, notes, overdrafts, mortgages, finance leases, factoring or any other similar arrangements the purpose of which is to raise money), and any unpaid profit-based or corporation income tax liabilities (net of any profit based or corporation income tax assets) and including the Germany RETT but excluding deferred tax assets and deferred tax liabilities, and the IRU Capex Amount, together with any other liability required to be included in Debt in accordance with Schedule 7, Part 2 (*Contents of Completion Statements*) and any other liability to the extent it would result in a cash outflow after the Effective Time (except to the extent included in Working Capital or otherwise expressly excluded in accordance with Schedule 7, Part 2 (*Contents of Completion Statements*)), in each case inclusive of all accrued but unpaid interest, fees, costs, expenses on or in respect of any of the foregoing (including prepayment, termination, redemption or other charges or costs which arise on or as a consequence of Completion but only as this relates to items included in Debt) and gross of any capitalised debt issue costs or loan arrangement fees, in each case as set out in the Completion Statement prepared in accordance with Schedule 7, Part 1 (*Preparation of Completion Statements*) and Schedule 7, Part 2 (*Contents of Completion Statements*).

"Disclosed" means fairly disclosed with sufficient detail to enable a reasonable buyer to identify the nature and scope of the matter disclosed and the impact on the Business.

"Disclosure Letter" means the letter dated on the date of the Put Option Agreement from the Sellers to the Buyer relating to the Warranties.

"Domain Names" shall mean internet domain names and other computer identifiers including Internet Protocol (IP) addresses.

"DPA" means Section 721 of the Defense Production Act of 1950, as amended (50 U.S.C. §4565), and all rules and regulations thereunder, including those codified at 31 C.F.R. Parts 800 and 802.

"Dutch Notary" means any civil-law notary (*notaris*) of Baker & McKenzie Amsterdam N.V., or such civil law notary's substitute.

"Dutch Transfer Deed" means the notarial deed of transfer pursuant to which all issued and outstanding shares in the capital of CenturyLink Europe, B.V. shall be transferred to the Buyer or its nominee.

"Effective Time" means immediately prior to Completion.

"EMEA" means Austria, Bahrain, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kenya, Liechtenstein, Luxembourg, Monaco, Netherlands, Norway, Poland, Portugal, Qatar, Romania, Saudi Arabia, Serbia, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, United Kingdom and United Arab Emirates.

"Employee" means those persons listed in the document contained in the Data Room at 2.12.10.5 "Updated Merlin Census with Salary for VDR - as of Oct 21 2022.xlsx", and any employee hired to replace any such person if their employment terminates prior to Completion, or who is substituted for a person marked as "proxy" in that document, as part of the Reorganisation, in accordance with Clause 6.3(d)(x).

"Encumbrance" means a mortgage, charge, pledge, lien, restriction, assignment, hypothecation, security interest, title retention or any other arrangement the effect of which is the creation of security, or any other interest, equity or other right of any person (including any right to acquire, option, right of first refusal or right of pre-emption), or any arrangement to create any of the same.

"Enterprise Value" means \$1,800,000,000 (one billion eight hundred million).

"Equity Interests" means shares, common stock, capital stock, partnership or membership interests or units (whether general or limited), and any other interest or participation that confers on a person the right to receive a share of the profits or losses of, or distribution of assets of, the issuing entity.

"Estimate" is defined in Schedule 6 (*Provisional Payment*).

"Exchange Rate" means with respect to a particular currency on a particular date, the closing mid-point rate of exchange for that currency into United States dollars as set out in the London edition of the Financial Times first published after that date.

"Excluded Assets" is defined in Clause 6.3(e).

"Excluded Business" means any other business operated by the Sellers' Group which does not form part of the Business, including any businesses referred to as Excluded Assets.

"Excluded Companies" means the Parent and each of its Associates other than the Transferring Companies.

"Excluded Liabilit(y)(ies)" means all liabilities relating to the Excluded Assets, all liabilities in respect of the circa \$5.7million payable owed to a supplier of Federal services in 2017, all borrowings save to the extent attached to a Transferred Asset (including each Transferring Company), any payables owed to any member of the Sellers' Group except any balances that are part of Working Capital or Debt, which will not be considered Excluded Liabilities.

"Excluded Marks" means any trademark owned or used by the Sellers or any of their Associates, including those that are comprised of or that include one or more of the following elements: Lumen, CenturyLink, Level 3, Vyvx, Streamroot, Servecast, Footprint, Sandpiper, Digital Island, Cable & Wireless, Focal, Corvis, Broadwing, Impsat and Global Crossing.

"FCC" means the United States Federal Communication Commission or any successor entity.

"FCC Condition" is defined in Clause 5.1.

"FDI Authority" means any relevant government agency, court or body acting pursuant to any foreign direct or national security law, statute or regulation in any jurisdiction in which the Buyer (and/or Sellers as the case may be) is required to submit a mandatory notification in respect of the Transaction.

"Global Vendor Contracts" means those contracts to which a Seller or a member of the Sellers' Group (other than a Transferring Company) is a signatory that reflect services or supplies provided on a global basis to the Sellers' Group, including those set out at folder 2.10.1.32 in the Data Room. For the avoidance of doubt, a Transferring Company may be a third party beneficiary of a Global Vendor Contract.

"HSR Act Clearance" means all applicable waiting periods (and any extensions thereof) under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and any contractual timing commitments with the Federal Trade Commission and the Antitrust Division of the United States Department of Justice through timing agreements or otherwise must have expired, been satisfied, or otherwise been terminated.

"Indemnities" means the specific indemnities set out in Clause 9.1 and **"Indemnity"** means any one of them.

"IP Licence" means the intellectual property license agreement in the agreed form to be entered into between the Sellers and the Buyer.

"IPR" means rights in and in relation to Confidential Information patents, inventions (whether or not patentable), registered designs, design rights, copyrights (including rights in software) and moral rights, database rights, semi-conductor topography rights, utility models and all rights or forms of protection having an equivalent or similar nature or effect anywhere in the world, whether enforceable, registered, unregistered or registrable (including, where applicable, all renewals, extensions and applications for registration) and the right to sue for damages for past and current infringement (including passing off and unfair competition) in respect of any of those rights.

"Law" means any regulation (including EU regulation), statute, law (including common law), subordinate legislation, act, treaty, ordinance, decree, directive, rule, circular, code, order, recommendation, notice, direction, code of practice, judgement or decision enacted, issued or promulgated by, or entered into with, any Authority and which has the force of law.

"Level 3" means Level 3 Communications LLC, a Delaware limited liability company and party to the Transitional Services Agreement.

"Long Stop Date" means the one year anniversary of the date of the Put Option Agreement.

"Losses" includes, in respect of any matter, all liabilities, damages, payments, fines, penalties, losses, costs (including reasonable legal costs), expenses (including Tax), disbursements.

"Lower Budgeted Capital Expenditure Amount" means the Budgeted Capital Expenditures less twenty percent (20%) of the Budgeted Capital Expenditures amount.

"Lumen Austria" means Lumen Technologies Austria GmbH, details of which are in Schedule 1, Part 2 (*Details of Lumen Austria*).

"Lumen Customer" means collectively one or more relevant members of the Sellers' Group receiving services from the Buyer Service Provider under the Merlin Master Services Agreement.

"Lumen Denmark" means Lumen Technologies Denmark ApS, details of which are Schedule 1, Part 4 (*Details of Lumen Denmark*).

"Lumen EMEA" means Lumen Technologies EMEA Holdings Limited, details of which are in Schedule 1, Part 3 (*Details of Lumen EMEA*).

"Lumen Master Services Agreement" means an agreement in the agreed form to be entered into between the Lumen Service Provider and the Buyer Customer at Completion pursuant to which the parties thereto may agree orders for the provision by the Lumen Service Provider to the Buyer Customer of certain services.

"Lumen UK" means Lumen Technologies UK Limited a company incorporated in England and Wales with registered number 02495998 whose registered office is at 260-266 Goswell Road, London, England, EC1V 7EB.

"Lumen Service Provider" means collectively one or more relevant members of the Sellers' Group providing services to the Buyer Customer under the Lumen Master Services Agreement.

"Management Accounts" means the information contained in the Data Room at 2.1.2.2.2 "Project Merlin – Combined Reported Balance Sheet (Thru Jun-22)" and 2.1.2.1.2 "Project Merlin – Combined Reported PL (Thru Jun-22)".

"Material Contracts" means any agreement or commitment whether conditional or unconditional and whether by deed, under hand, oral or otherwise, in each case which is legally binding and which:

- (a) is with a top 20 customer based on billable revenue for the financial year 2021 for the Business; (ii) with a top 24 vendor based on total spend for the financial year 2021 for the Business; (iii) with a top 20 data centre customer based on revenue for the financial year 2021 for the Business; (iv) the Subsea Network Services Agreement dated 1 August 2022 between, inter alios, Lumen Technologies Europe Limited and Global Crossing Americas Solutions, LLC, for the operation, maintenance and repair of certain subsea networks; (v) in respect of receiving marine maintenance and repair services; (vi) in respect of the grant of an indefeasible right of use in the Grace Hopper, Dunant, and Apollo South subsea cable systems; or (vii) with Network Rail or its affiliates for the purposes of granting an easement to lay and install network equipment across certain rail routes;
 - (b) involve a Transferring Company using or having the right to use material network infrastructure, including fiber, conduit space, power and other associated property necessary to operate a fiber optic network which (i) does not constitute an indefeasible right of use arrangement requiring payments by any Transferring Company to a third party in excess of \$5,000,000 in a fiscal year or (ii) an indefeasible right of use arrangement with a value requiring payments to a third party exceeding \$2,500,000 in a fiscal year;
 - (c) evidence third-party indebtedness for borrowed money or the making of any loan, in each case, in excess of \$1,000,000 individually;
 - (d) involve any guarantee in respect of any Indebtedness or obligation of any person in an amount in excess of \$1,000,000 (other than in the ordinary course of business and other than with respect to any indebtedness or obligation of any wholly-owned Transferring Company to another wholly-owned Transferring Company) other than the Guarantees;
 - (e) involve any settlement, conciliation or similar agreement pursuant to which any Transferring Company will be required to pay consideration in excess of \$500,000;
 - (f) grant to any person a right to purchase (including rights of first refusal, options or similar rights) any material assets belonging to a Transferring Company in excess of \$500,000; or
 - (g) contain any future Capital Expenditure obligations of the Transferring Companies in excess of \$5,000,000 which is not set out in the budget in
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paragraph 3(q) of Schedule 7, Part 2 (*Contents of Completion Statements*).

"Merlin Master Services Agreement" means an agreement in the agreed form to be entered into between the Lumen Customer and the Buyer Service Provider at Completion pursuant to which the parties thereto may agree orders for the provision by the Buyer Service Provider to the Lumen Customer of certain services.

"Net Debt" means the combined Debt less combined Cash of the Transferring Companies as determined in accordance with Schedule 7 (*Completion Statements*).

"NS&I Condition" is defined in Clause 5.1.

"Ofcom" means the UK Office of Communications.

"Parent" means Lumen Technologies, Inc., of 100 CenturyLink Drive, Monroe, Louisiana 71203.

"Pensions Regulator" means the body corporate known as the Pensions Regulator and established under section 1 of the Pensions Act 2004.

"Permitted Variances" the permitted variances between the Accounts and the Audited Accounts as described in the Permitted Variances Note.

"Permitted Variances Note" means a note setting out the Permitted Variances contained in Schedule 12 (*Permitted Variances Note*).

"Property" means those properties listed in Schedules 2 and Schedule 5 of the Warranty Deed.

"Provisional Payment" means the sum payable by the Buyer on account of the Consideration in accordance with Clause 3.4 and calculated in accordance with Schedule 6 (*Provisional Payment*).

"Put Option Agreement" means the put option agreement entered into on 02 November 2022 between the Sellers as beneficiaries and the Buyer as promisor pursuant to which the Buyer commits to sign this agreement and to purchase the Shares in accordance with its terms.

"Relevant Accounting Standards" means US GAAP consistent with the accounting standards applied by the Parent.

"Reorganisation" means (i) all such actions as may be required to ensure that at Completion the Transferring Companies own the business and assets which are contemplated in the "Transferring IN" column of the Transaction Perimeter Summary and a member of the Sellers' Group (other than a Transferring Company) owns the business, assets and liabilities which are contemplated in the "Transferring OUT" column of the Transaction Perimeter Summary, (ii) all such actions required in connection with reducing and extinguishing any intercompany balances between the Sellers' Group and the Transferring Companies before Completion; and (iii) the transfer by 41C Ventures LLC of its 5.19% interest in Lumen Technologies Germany GmbH to Level 3 Holdings B.V. so that Lumen Technologies Germany GmbH is wholly owned by Level 3 Holdings B.V.

"Restricted Area" means Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Monaco, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom.

"Retained Customer Contracts" means all Contracts relating to the Business with customers as to which an Excluded Company has the direct contractual relationship with the customer (and therefore bills the customer and is primarily responsible for controlling the customer relationship, whether or not such Contract relates partly or wholly to the Business), it being understood that the relevant Transferring Company (as a Buyer Service Provider) will provide services to the

Excluded Company (as a Lumen Customer) to the extent necessary to permit the Excluded Company to discharge its obligations to the customer under the Retained Customer Contracts all on the terms and conditions specified in the Merlin Master Services Agreement or other applicable Transaction Document.

"Retained Employees" means any person employed by the Transferring Companies other than the Employees.

"Sellers' Group" means the Sellers, the Parent and any Associate of any of them from time to time (excluding immediately following Completion any Transferring Company).

"Sellers' Representative" has the meaning given in Clause 15.1(a).

"Sellers' Solicitors" means Bryan Cave Leighton Paisner LLP of Governor's House, 5 Laurence Pountney Hill, London EC4R 0BR.

"Sellers' Solicitors' Account" means the account of the Sellers' Solicitors with Barclays Bank PLC, 50 Pall Mall, London SW1Y 5AX, 20-65-82, account number: 50089753, account name: Bryan Cave Leighton Paisner LLP, reference: 1357504.67.

"Senior Employee" means any Employee employed at Grade P7 (or equivalent as per the "Merlin Common Level") or above.

"Separation Planning Protocol" means the Separation and Service Verification Planning Protocol attached as Schedule 14 (*Separation and Service Verification Planning Protocol*) pursuant to which Level 3 and the Buyer will conduct separation planning (to commence following Completion), human resources separation activities (to be completed on or immediately following Completion) and validation of the services to be provided under the Lumen Master Services Agreement and the Merlin Master Services Agreement.

"Shareholder Debt Amount" means the aggregate amount owed by the Transferring Companies to the Sellers and any member of the Sellers' Group (other than the Transferring Companies) ("Intercompany Payable"), net of any amounts owed by the Sellers and any member of the Sellers' Group (other than the Transferring Companies) to the Transferring Companies ("Intercompany Receivable") in each case as at the Effective Time (whether principal or interest and including all break fees, prepayment fees or penalties) in each case as set out in the Completion Statement prepared in accordance with Schedule 7, Part 1 (*Preparation of Completion Statements*) and Schedule 7, Part 2 (*Contents of Completion Statements*).

"Shares" means:

- (h) the 40 ordinary shares of €453.78 each in the capital of CenturyLink Europe, making up the entire issued share capital of CenturyLink Europe;
- (i) the EUR 35,000 share capital of Lumen Austria, making up the entire issued share capital of Lumen Austria;
- (j) the 201,376,853 ordinary shares of £1.00 each in the capital of Lumen EMEA, making up the entire issued share capital of Lumen EMEA;
- (k) the 3,100 ordinary shares of 100 DKK each in the capital of Lumen Denmark, making up the entire issued share capital of Lumen Denmark;
- (l) all of the membership interests of US Asset Co.; and
- (m) the 1 share in the capital of Lumen Technologies Belgium SA held by L3I (with the remainder of the entire issued share capital being held by a Level 3 Holdings BV (being a Transferring Company)).

"Specific Accounts Qualifications" means (i) the Business has not operated on a separate standalone basis and historically has not been separately reported, (ii)

the Accounts reflect certain allocated charges which do not necessarily reflect amounts that would have resulted from arms-length transactions or that the Business would incur on a standalone basis and (iii) the Accounts are not necessarily indicative of what the results of operations and financial position of the Business will be in the future.

“**Subsidiaries**” means the companies listed in Schedule 2 (*Other Transferring Companies*) and “**Subsidiary**” means any one of them.

“**Supplemental Disclosure Letter**” means the supplemental disclosure letter in relation to the Warranties dated on Completion from the Sellers to the Buyer in respect of matters occurring between the date of the Put Option Agreement and Completion only.

“**Surviving Provisions**” means Clause 1 (*Definitions and Interpretation*), Clause 11 (*Post-completion matters*), Clause 12 (*Sellers guarantee*), Clause 13 (*Announcements and confidentiality*), Clause 14 (*Assignment*), Clause 17 (*Non-recourse*), Clause 24 (*Severability*), Clause 25 (*Waiver*) and Clause 31 (*Governing law and jurisdiction*).

“**Target Companies**” means the companies listed in Schedule 1 (*Details of the Target Companies*) and “**Target Company**” means any one of them.

“**Target Working Capital**” means \$27,200,000 (twenty-seven million two hundred thousand).

“**Tax**” or “**Taxation**” has the meaning given to it in the Tax Deed.

“**Tax Deed**” means the deed in the agreed form relating to Tax.

“**Team Telecom**” means the Committee for the Assessment of Foreign Participation in the United States Telecommunications Services Sector, established pursuant to Executive Order 13913, Establishing the Committee for the Assessment of Foreign Participation in the United States Telecommunications Services Sector, 85 FR 19643 (April 8, 2020), conducting national security review of a FCC-notified transaction involving potential foreign involvement in U.S. telecommunications assets, as well as any predecessor or successor group or other group within the Executive Branch of the United States government charged with performing or assisting the FCC with such review.

“**Transaction**” means the transactions contemplated by this Agreement (or any part of those transactions).

“**Transaction Comms**” means a communications plan including FAQ to be discussed in accordance with Clause 6.3(d)(v) from time to time.

“**Transaction Documents**” means this Agreement and the documents entered into by the Buyer or any member of the Buyer’s Group and the Sellers or any member of the Seller’s Group in connection with it including the Warranty Deed, the Tax Deed, the Disclosure Letter and the Supplemental Disclosure Letter.

“**Transaction Perimeter Summary**” means the summary of the transaction perimeter set out in Schedule 11 (*Transaction Perimeter Summary*).

“**Transferred Assets**” shall mean all assets, properties, and rights (including Transferred Contracts and the Transferring IPR) related to the Business, which are owned by a Transferring Company (assuming completion of the actions contemplated in the Transaction Perimeter Summary), but excluding, for the avoidance of doubt, the Excluded Assets.

“**Transferring Companies**” means the Target Companies and the companies listed in Schedule 2 (*Other Transferring Companies*) and “**Transferring Company**” means any one of them.

"Transferred Contracts" means (i) all Transferred Customer Contracts and (ii) all other Contracts to which a Transferring Company is a signatory, but excluding any contracts relating to or included in the Excluded Assets.

"Transferred Customer Contracts" means all Contracts with customers (other than Retained Customer Contracts) relating to the Business as to which a Transferring Company has the direct contractual relationship with the customer (and therefore bills the customer and is primarily responsible for controlling the customer relationship), it being understood that the relevant Excluded Company (as a Lumen Service Provider) will provide services to the relevant Transferring Company (as a Buyer Customer) to the extent necessary to enable the Transferring Companies to discharge their obligations to the customer under any Transferred Customer Contract, all on the terms and conditions specified in the Lumen Master Services Agreement or other applicable Transaction Document.

"Transferring Employees" means the employees of the Excluded Companies listed in the document contained in the Data Room at 2.12.10.5 "Updated Merlin Census with Salary for VDR - as of Oct 21 2022.xlsx", and any employee hired to replace any such person in the event of the termination of their employment prior to Completion.

"Transferring IP Addresses" means any Internet Protocol (IP) address for which a Transferring Company is explicitly recorded as owner thereof by the Regional Internet Registry for Europe (RIPE).

"Transferring IPR" means (i) the Transferring IP Addresses; and (ii) any and all IPR which a Transferring Company is the legal and beneficial owner as at the date of the Put Option Agreement including without limitation where it is listed as owner in the official records of a governmental agency.

"Transitional Services Agreement" means an agreement in the agreed form to be entered into between Level 3 and the Buyer at Completion pursuant to which Level 3 will provide certain limited transitional services to the Buyer or the Transferring Companies with effect from Completion.

"UK DB Pension Schemes" means (i) the Global Crossing Shared Cost Section of the Railway Pension Scheme; and (ii) the Global Crossing Pension Scheme governed by a trust deed and rules dated 22 April 2004, as amended from time to time.

"Unassigned Asset" is defined in Clause 6.4(a).

"Upper Budgeted Capital Expenditure Amount" means the Budgeted Capital Expenditures plus twenty percent (20%) of the Budgeted Capital Expenditures amount.

"US Assets" means the transferring US assets identified in the Transaction Perimeter Summary.

"US Asset Co." means Camelot Landing, LLC, details of which are in Schedule 1, Part 5 (*Details of US Asset Co.*).

"\$" or **"USD"** means United States dollars, the lawful currency of the United States of America.

"W&I Policy" means the Buyer's warranty and indemnity insurance policy relating to the Warranties and the Tax Deed.

"Warranties" means the warranties contained in the Warranty Deed.

"Warranty Deed" means the deed entered into between the Sellers as warrantors and the Buyer as the beneficiary of the warranties on the date of the Put Option Agreement pursuant to which the Sellers have provided certain warranties to the Buyer in connection with the Transaction.

“Working Capital” means the aggregate amount of the current assets of the Transferring Companies and the Business (excluding Cash, investments and deferred tax assets and profit based or corporation income tax assets) less the aggregate amount of the current liabilities of the Transferring Companies and the Business (excluding amounts to the extent included in Debt, and excluding asset retirement obligations, one-off separation costs, profit based or corporation income tax liabilities and deferred tax liabilities, but including all current Assumed Liabilities except to the extent expressly excluded from Working Capital pursuant to foregoing), together with any item required to be included in Working Capital in accordance with Schedule 7, Part 2 (*Contents of Completion Statements*) in each case as set out in the Completion Statement prepared in accordance with Schedule 7, Part 1 (*Preparation of Completion Statements*) and Schedule 7, Part 2 (*Contents of Completion Statements*).

1.2

In this Agreement, unless otherwise stated:

- (a) reference to this Agreement is to this Agreement as varied, supplemented, novated or replaced from time to time;
 - (b) reference to a document or a provision of a document is to that document or provision as varied, supplemented, novated or replaced from time to time;
 - (c) reference to a document being in **“agreed form”** means, in relation to any document, the form of that document which has been identified in writing (including by way of email) by the Buyer’s Solicitors and the Sellers’ Solicitors as being in agreed form;
 - (d) reference to a statute or statutory provision, enactment, EU directive or EU regulation includes a reference to:
 - (i) any statutory amendment, modification, replacement consolidation or re-enactment of it from time to time except to the extent that any consolidation, re-enactment, modification or replacement enacted after the date of this Agreement would extend or increase the liability of any party to another under this Agreement; and
 - (ii) all orders, regulations, instruments or other subordinate legislation (as defined in section 21(1) of the Interpretation Act 1978) made under it to the extent in force at the date of this Agreement.
 - (e) unless otherwise specified or required for the purpose of enforcement or interpretation, all references to statutes, statutory provisions or enactments are to statutes, statutory provisions or enactments of England;
 - (f) references to any English statutory provision or legal term for any action, remedy, method of judicial proceeding, legal document, legal status, court, official or other legal concept, state of affairs or thing shall in respect of any jurisdiction other than England be deemed to include that which most nearly approximates in that jurisdiction to the English statutory provision or legal term or other legal concept, state of affairs or thing;
 - (g) reference to a party is to a party to this Agreement and includes a reference to that party’s successors and permitted assignees;
 - (h) reference to a **“person”** includes a legal or natural person, partnership, association, trust, company, corporation, joint venture, government, state or agency of the state or other body;
 - (i) reference to a governmental, regulatory or administrative authority or other agency or body that ceases to exist or is reconstituted, renamed or replaced or has its powers or function removed, means the agency or body which performs most closely the functions of that authority, agency or body;
 - (j) a Clause or Schedule is to a Clause of or Schedule to, this Agreement and any reference to this Agreement includes its Schedules;
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- (k) the terms "**parent undertaking**", "**subsidiary undertaking**" and "**undertaking**" (and, unless the context otherwise requires, other terms used in this Agreement that are defined in the Companies Act 2006) shall be interpreted in accordance with the Companies Act 2006;
- (l) references to "**writing**" or "**written**" include any method of reproducing words or text in a legible and non-transitory form and, for the avoidance of doubt, shall include text transmitted by e-mail;
- (m) references to "**indemnify**" and to "**indemnifying**" any person against any Losses by reference to any matter shall mean indemnifying that person on demand from and against all Losses suffered or incurred as a result of or in connection with or which would not have arisen but for that matter;
- (n) references to any "**arrangement**" shall include any contract, agreement, transaction, commitment, instrument, licence, franchise, assignment, lien, Encumbrance, charge, concession, understanding, permit, policy, grant, employee benefit or bonus, or other arrangement (in each case whether legally enforceable or not);
- (o) references to any "**matter**" shall be deemed to include any fact, matter, event or circumstance;
- (p) where any provision is qualified or phrased by reference to the "ordinary course of business", that reference shall be construed as meaning the customary and usual course of trading for the Business during the 12 months before the date of the Put Option Agreement;
- (q) the term "**connected person**" has the meaning given to it in section 1122 Corporation Tax Act 2010 and any references to persons being "**connected**" shall have a corresponding meaning; and
- (r) reference to the time of day is to the time in London.

1.3 In this Agreement the interpretation of general words shall not be restricted by words indicating a particular class or particular examples and "**including**" means "including without limitation".

1.4 In the Warranties references to any notice, allegation, claim, request or other communication having been received by a Transferring Company shall be construed as a reference to a communication received in writing (including e-mail) by a person whose job it was to receive or otherwise deal with it.

1.5 To determine whether a monetary limit or threshold set out in this Agreement has been reached or exceeded, any amounts not stated in United States dollars shall be converted into United States dollars at the Exchange Rate on the relevant date. The relevant date is:

- (a) when determining whether a limit or threshold in a warranty has been reached or exceeded, the date at which the Warranty is given;
- (b) when determining whether a threshold Schedule 5 (*Seller protection provisions*) has been exceeded, the date a Claim is notified; and
- (c) when determining whether a threshold in Schedule 3 (*Pre-Completion Obligations*) has been exceeded, the date the relevant transaction was entered into or undertaken (as the case may be) in the relevant period.

2 **SALE AND PURCHASE**

2.1 Subject to the terms of this Agreement, the Sellers agrees to sell to the Buyer the Shares with full title guarantee and the Buyer shall buy the entire legal and

beneficial ownership in the Shares, with all rights attaching to them, free from Encumbrances, with effect from Completion.

- 2.2 The Buyer and the Sellers are not obliged to complete the sale and purchase of any of the Shares unless the sale and purchase of all of the Shares is completed simultaneously.
- 2.3 Each Seller covenants with the Buyer that:
- (a) it has now, and at all times up to and at Completion shall have, full power and the right to sell and transfer the legal and beneficial title in the Shares on the terms set out in this Agreement;
 - (b) the Shares do, and at all times up to and at Completion shall, represent the entire allotted and issued share capital of the Target Companies; and
 - (c) a Target Company (or a Subsidiary) is, and at all times up to and at Completion shall be, the sole legal and beneficial owner of the entire issued share capital of each Subsidiary, or in the case of: (a) Lumen East Africa Limited 80% of the entire issued share capital; and (b) until completion of the Reorganisation: (i) Lumen Technologies Germany GmbH 94.81% of the issued share capital; and (ii) Qwest Holdings B.V. the entire issued share capital, and in each case free from all Encumbrances.
- 2.4 The Shares shall be sold together with all rights attaching to them now or after the date of the Put Option Agreement, including all rights to any dividend or other distribution (other than any dividend or distribution which is included as a liability in the Completion Statement) declared, made or paid after the date of the Put Option Agreement.
- 2.5 Each Seller irrevocably waives and agrees to procure the waiver of any restrictions on transfer (including rights of pre-emption) that may exist in relation to the Shares, whether under the constitutional documents of the Target Companies or otherwise.

3 **CONSIDERATION**

- 3.1 The total purchase price for the Shares to be paid by the Buyer to the Sellers under this Agreement is as follows:
- (a) the Enterprise Value; *less*
 - (b) a sum equal to the Net Debt if a positive amount or plus a sum equal to the Net Debt if a negative amount; *plus*
 - (c) an amount by which the Working Capital exceeds the Target Working Capital or minus an amount by which the Working Capital falls short of the Target Working Capital (hereby referred to as the "**Working Capital Adjustment**"),
- determined in accordance with Schedule 7 (*Completion Statements*) (the "**Consideration**").
- 3.2 The Sellers shall be entitled to the Consideration in the proportions set out in the Completion Statements.
- 3.3 Not less than 5 Business Days prior to Completion the Sellers shall provide the Buyer with a draft notice setting out:
- (a) the amount of the Provisional Payment and attaching the Estimate of Net Debt and Working Capital Adjustment as prepared in accordance with Schedule 6 (*Provisional Payment*) together with reasonable supporting information; and
 - (b) the amount, payee and account details in respect of Shareholder Debt Amount to be paid by the Buyer on Completion (if any),
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and in the event that the Provisional Payment (which for this purpose only shall include any amounts required to pay the Shareholder Debt Amount (if any)) stated in the draft notice exceeds \$1,786,000,000 (one billion seven hundred and eighty-six million), the parties shall discuss in good faith any comments in respect of the Provisional Payment and the Estimates from the Buyer and a revised notice shall be provided to the Buyer not less than 3 Business Days prior to Completion which, in the event that the Sellers' Representative and the Buyer have not reached an agreement on the Estimate of the Net Debt and the Estimate of the Working Capital Adjustment shall be adjusted by the Sellers such that the Provisional Payment (which for this purpose only shall include any amounts required to pay the Shareholder Debt Amount (if any)) shall be \$1,786,000,000 (one billion seven hundred and eighty-six million) (the "**Completion Payments Notice**").

3.4 Subject to the Sellers complying with their obligations under Schedule 4 (*Completion formalities*) the Buyer shall pay the Provisional Payment to the Sellers' Solicitors in cash via electronic transfer on Completion in accordance with Schedule 4 (*Completion formalities*).

3.5 The Sellers hereby confirm that the Sellers Solicitors are irrevocably authorised by the Sellers to receive payment of the Consideration (including any payments made in accordance with Clause 4.1) on the Sellers' behalf and the receipt by the Sellers Solicitors shall be an absolute discharge for the Buyer who shall not be concerned to see to the application of that amount or be answerable for the loss or misapplication of that amount.

4 **ADJUSTMENTS TO CONSIDERATION**

4.1 Following Completion, the Completion Statements shall be prepared and agreed or determined in accordance with Schedule 7 (*Completion Statements*) in order to ascertain Net Debt, Working Capital Adjustment and, accordingly, the amount of the Consideration, and:

(a) if the Consideration exceeds the Provisional Payment, the Buyer shall pay to the Sellers Solicitors on behalf of the Sellers an amount equal to the excess; or

(b) if the Consideration is less than the Provisional Payment, the Sellers shall pay the Buyer an amount equal to the shortfall,

in either case any required adjustment to the Consideration will be transferred within ten Business Days after the Completion Statements have been agreed or determined in accordance with Schedule 7 (*Completion Statements*).

4.2 Any payment under this Agreement other than the repayment of the Shareholder Debt Amount (if any) shall, so far as it is able, be treated as an adjustment to the Consideration paid by the Buyer to the Sellers under the Agreement.

5 **CONDITIONS AND TERMINATION**

5.1 Completion is conditional on (subject to waiver in accordance with Clause 5.8):

(a) in respect of the CMA:

(i) the CMA having confirmed in terms and in a form satisfactory to the Buyer (subject always to the provisions of Clause 5.7) that it does not intend to request further information or open an investigation in relation to the Transactions or any matters arising therefrom, after submission by the Buyer of a briefing paper to the CMA's merger intelligence committee setting out the reasons why the CMA should not commence an investigation; or

(ii) in the event that the Buyer, having consulted with the Sellers, elects not to submit the briefing paper referenced in Clause 5.1(a)(i) or if the confirmation referenced in Clause 5.1(a)(i) is not received following submission of such a briefing paper, the CMA having (A) requested the submission of, or received, a draft merger notice in relation to the Transactions; (B)

given notice to the Buyer or a Seller that it is intending to commence a Phase 1 merger investigation in relation to the Transactions; (C) indicated that the statutory review period in which the CMA has to decide whether to make a reference in relation to the Transactions under Section 34ZA(3) of the Enterprise Act 2002 (the "**Enterprise Act**") has begun; or (D) requested documents or attendance by a witness or witnesses under Section 109 of the Enterprise Act in relation to the Transaction; and the CMA having concluded following a Phase 1 merger investigation that it does not intend to make a Phase 2 reference under section 33(1) of the Enterprise Act (whether as a result of undertakings in lieu proposed by the Buyer in accordance with its obligations under Clause 5.7 of this Agreement or otherwise); or

- (iii) if the CMA makes a Phase 2 reference under section 33(1) of the Enterprise Act, the CMA having (i) concluded in a report published in accordance with Section 38 of the Enterprise Act that the Transaction may not be expected to result in a substantial lessening of competition within any market or markets in the United Kingdom for goods or services; or (ii) in the event of a conclusion from the CMA, pursuant to section 36(1) of the Enterprise Act, that an anticompetitive outcome (within the meaning given by section 35(2)(b) of the Enterprise Act) has arisen or may be expected to arise, decided pursuant to section 41(2) and section 82 of the Enterprise Act to accept such undertakings as proposed by the Buyer (in accordance with its obligations under Clause 5.7 of this Agreement) to remedy, mitigate or prevent the anti-competitive outcome and determine the reference.
 - (b) the European Commission having adopted a decision under Article 6(1)(b), 6(2), 8(1) or 8(2) of the EU Merger Regulation declaring the Transaction to be compatible with the internal market, either unconditionally or subject to conditions, obligations, undertakings or modifications on terms and in a form satisfactory to the Buyer (subject always to the provisions of Clause 5.6);
 - (c) the Parties having received HSR Act Clearance in relation to the Transaction;
 - (d) the approvals required to be obtained from the FDI Authority shall have been obtained, be in full force and on terms satisfactory to the Buyer in the following jurisdictions:
 - (i) Austria;
 - (ii) Denmark;
 - (iii) France;
 - (iv) Germany;
 - (v) Italy;
 - (vi) Romania; and
 - (vii) Spain;
 - (e) to the extent that any Irish foreign direct investment screening legislation (pursuant to Regulation 2019/452 of the European Parliament and Council of the European Union of 19 March 2019) (the "**Irish FDI Regime**") is established prior to Completion - and application to the Transaction is determined - the following event having occurred before Completion:
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- (i) the Department of Enterprise, Trade and Employment deciding in terms satisfactory to the Buyer that it will not call in the Transaction under the Irish FDI Regime; or
 - (ii) clearance, consent or other applicable authorisation for the Transaction having been obtained by the Department of Enterprise, Trade and Employment;
- (f) in so far as the Parties, acting in good faith, agree that the Transaction falls within the scope of the Belgian foreign direct investments screening regime as envisaged by the Cooperation agreement of 1 June 2022 on the screening of foreign direct investments, clearance for the Transaction is obtained from the Interfederal Screening commission (Interfederale Screeningscommissie / Commission de Filtrage Interfédéral);
- (g) in so far as the Parties, acting in good faith, agree that the Transaction falls in the Netherlands within the scope of either article 14a.2 of the Dutch Telecommunications Act (Telecommunicatiewet) or the Dutch Act on Security Screening of Investments, Mergers and Acquisitions Act (Wet Veiligheidstoets investeringen, fusies en overnames), clearance for the Transaction from the Bureau Toetsing Investeren;
- (h) FCC consent (as conditioned by any mitigation conditions agreed to obtain Team Telecom and U.S. State Department clearance) shall have been obtained and be in full force and effect (the "**FCC Condition**");
- (i) receipt of CFIUS Clearance, if a notice is submitted to CFIUS in accordance with the terms of this Agreement (the "**CFIUS Condition**");
- (j) receipt in writing from the UK Secretary of State of:
- (i) a notification under section 14(8)(b)(ii) of the UK National Security and Investment Act 2021; or
 - (ii) a final order under section 26(2)(b) of the UK National Security and Investment Act 2021 that is on terms that satisfactory to the Buyer; or
 - (iii) a final notification under section 26(2)(a) of the UK National Security and Investment Act 2021 (the "**NS&I Condition**").

5.2 The Buyer shall, at its own cost, have primary responsibility for fulfilling the Conditions and shall take any commercially reasonable steps for that purpose, including making appropriate applications, submissions, notifications and filings in consultation with the Sellers' Representative in accordance with this Clause 5.2 within the timeframes stipulated at Clause 5.5 below. For this purpose the Buyer shall:

- (a) allow the Sellers' Representative a reasonable opportunity to comment on all material draft applications, notifications or filings, and give reasonable consideration to any such comments and provide the Sellers' Representative with the final drafts, prior to submission to any Authority, in accordance with this Agreement;
 - (b) provide the Sellers' Representative with reasonable notice of any material meeting or call with any Authority in connection with the Transaction, and, where appropriate, allow the Sellers' Representative or adviser of the Sellers to attend and participate in any meeting or call;
 - (c) communicate on material subjects with any Authority only after prior consultation with the Sellers' Representative or their advisers (and incorporating any reasonable comments and requests of the Sellers Representative and their advisers);
 - (d) promptly notify the Sellers' Representative and provide copies or (in the case of non-written communications) details, of all material
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communications with any Authority relating to any action required to satisfy or the satisfaction of the Conditions; and

- (e) regularly review with the Sellers' Representative the progress of any notification or filings with a view to satisfying the Conditions at the earliest reasonable opportunity.

5.3 The Sellers shall promptly provide the Buyer and any Authority with:

- (a) any necessary information, data and documents in their possession (and, to the extent such provision would include the disclosure of confidential or financial information, subject to appropriate confidentiality undertakings being obtained from such Authority) requested in reasonable time (unless it is a direct request from the Authority) and required for the purpose of making any submissions, notifications and filings to any such Authority; and
- (b) any other reasonable assistance required for the purposes of fulfilling the Conditions.

5.4 The Sellers shall be entitled to only share on an external counsel to counsel basis, any confidential, commercially sensitive or financial information regarding the Sellers or any member of the Sellers' Group, that is reasonably required for the purpose of fulfilling the Conditions.

5.5 In furtherance and not in limitation to the provisions of Clause 5.2, the Buyer agrees:

- (a) for the purposes of satisfying Clause 5.1(b):
 - (i) file the initial case team allocation request with the European Commission as soon as reasonably practicable after the execution of this Agreement; and
 - (ii) file the draft Short Form CO or Form CO in respect of the Transaction with the European Commission as soon as reasonably practicable thereafter;
 - (b) to submit the briefing paper referenced in Clause 5.1(a)(i), or the draft merger notice referenced in Clause 5.1(a)(ii), to the CMA as soon as reasonably practicable after the execution of this Agreement and/or, in the event the CMA does not give the confirmation referenced in Clause 5.1(a)(i), submit a draft merger notice to the CMA as soon as reasonably practicable thereafter;
 - (c) to file (jointly with the Sellers if required) any notices, submissions, responses, information requested by any relevant Authority, including for the purposes of satisfying Clause 5.1(c) to Clause 5.1(f) (inclusive) as soon as reasonably practicable following the execution of this Agreement;
 - (d) to file as soon as reasonably practicable following the execution of this Agreement (jointly with the Sellers if required) any notices, submissions, responses, draft agreements and amendments, information requested by Team Telecom, or agreement termination proposals with Team Telecom, but solely to the extent that such notices, submissions, responses, draft agreements and amendments, information requested by Team Telecom or agreement termination proposals are required in connection with the FCC's review of any application filed in connection with the FCC Condition, or that Sellers or Buyer determines are required under Law;
 - (e) to file a pre-filing version of a joint voluntary notice in respect of the Transaction pursuant to the DPA, and as soon as practicable thereafter, the Parties shall file, on a date that the parties mutually agree will minimize the risk of a withdrawal and refiling or other protracted review or investigation, a formal version of the joint voluntary notice pursuant to the DPA for the purpose of receiving satisfying the CFIUS Condition; and
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(f) to file the mandatory notification with the Department for Business, Energy and Industrial Strategy to satisfy the NS&I Condition as soon as reasonably practicable following the execution of this Agreement.

5.6 In furtherance and not in limitation to the provisions of Clause 5.3, the Sellers agree to file any notices, submissions, responses, information required or requested by the Federal Trade Commission and the Antitrust Division of the United States Department of Justice for the purposes of satisfying Clause 5.1(c) as soon as reasonably practicable following the execution of this Agreement.

5.7 Without prejudice to any other provision of this Agreement:

- (a) the Buyer shall promptly take any and all actions required by any relevant Authority in order to satisfy any of the Conditions so as to enable Completion to occur as promptly as reasonably practicable (subject to the Sellers fulfilling their obligations under Clause 5.3) (and in any event no later than the Extended Long Stop Date), including: (i) negotiating, committing to and effecting, by consent decree, hold separate orders, trust or otherwise, the sale, license, divestiture or disposition of any businesses, product lines or assets of the Target Companies; and (ii) otherwise taking or committing to take actions that after Completion would limit the Buyer's or the Target Companies' freedom of action or operations with respect to, or its or their ability to retain, any businesses, product lines or assets of the Target Companies. In that regard the Buyer shall agree to divest, sell, dispose of, hold separate, or otherwise take or commit to take any action that limits the Buyer's or the Target Companies' ability to retain or freedom of action with respect to, any of the businesses, product lines or assets of the Target Companies; provided that any such action contemplated above is conditioned upon the consummation of the Transaction;
- (b) the Buyer agrees to provide such information and assurances as to financial capability, resources, creditworthiness, foreign ownership, character and other qualifications as may be reasonably required to respond to any request from any Authority or other third party in connection with satisfying the Conditions;
- (c) whether or not the Transaction is consummated, the Buyer shall be responsible for all filing fees (including all filing fees with respect to any regulatory approvals required to satisfy the Conditions) of any Authority in order to satisfy the Conditions other than the fees of and payments to the Sellers' legal and professional advisors;
- (d) the Buyer shall not make any filings or communicate with any Authority which is not required in order to fulfil the Conditions, or include any material information in excess of what is reasonably required in a required filing with any Authority, without in each case first obtaining the prior written consent of the Sellers to the making of it and to its form and content (provided that such consent is not unreasonably withheld or delayed); and
- (e) the Buyer shall notify the Sellers' Representative promptly upon:
 - (i) becoming aware that a Condition has been fulfilled;
 - (ii) any material contact from any Authority; and
 - (iii) becoming aware of any matter that may be reasonably expected to prevent or delay the satisfaction of any Condition prior to the Long Stop Date.

Without prejudice to the generality of the foregoing, this includes disclosure of any indication that any Authority may intend to withdraw its approval of, or raise an objection to, or impose a condition on, the sale and purchase of the Shares pursuant to this Agreement.

- 5.8 The Buyer may by notice to the Sellers' Representative waive any Condition that is capable of waiver, provided that the Buyer has obtained the prior written consent of the Sellers' Representative (not to be unreasonably withheld).
- 5.9 If the Conditions are not satisfied (or become incapable of being satisfied) or (where applicable) have not been waived in accordance with Clause 5.8 on or before the Long Stop Date (or if applicable, the Extended Long Stop Date), this Agreement shall terminate and the provisions of Clause 20 (*Termination*) shall apply and no party shall have any claim under this Agreement except in respect of any rights and liabilities which have accrued in consequence of a breach of this Agreement before termination or under any of the Surviving Provisions.
- 5.10 If, by 30 June 2023, any Conditions remain unsatisfied but are still capable of being satisfied, the Sellers' Representative and the Buyer shall each individually have the right (prior to the Long Stop Date) to give notice to the other to extend the Long Stop Date for satisfaction or waiver of the Conditions to a date falling no later than six calendar months after the Long Stop Date (the "**Extended Long Stop Date**").

6 PRE-COMPLETION

- 6.1 Until Completion the Sellers undertake, within the confines of applicable law, procure the performance and observance by the Transferring Companies of the things specified in Schedule 3 (*Pre-Completion Obligations*) provided always that nothing shall impose any obligation on the Sellers to prevent or restrict any Transferring Company from doing or omitting to do anything:
- (a) Subject to Schedule 3 (*Pre-Completion Obligations*) required for the performance of any contract (including any contract relating to any debt or borrowing arrangements), agreement or arrangement entered into prior to the date of the Put Option Agreement which has been Disclosed;
 - (b) required in order to comply with any applicable Law or regulation or court order or as required by any Authority;
 - (c) that is otherwise than as specified in Schedule 3 (*Pre-Completion Obligations*), but for which the Buyer has provided prior written consent;
 - (d) required in connection with the Reorganisation; or
 - (e) in connection with any circumstance which is an emergency posing an imminent threat to human health or safety or with respect to which, imminent action is required to prevent the imposition of material liability on any Transferring Company, provided that to the extent practicable the Sellers shall be required to notify the Buyer, and obtain the Buyer's prior written consent, in advance of any such action and, to the extent not so practicable, in any event notify the Buyer of any such action promptly thereafter.
- 6.2 Before Completion the Buyer shall not, without the prior written consent of the Sellers' Representative, contact any employees of, suppliers to, or customers of any member of the Sellers' Group, including of a Transferring Company in connection with this Agreement or the Transaction, save that nothing in this Agreement shall prevent any member of the Buyers' Group from contacting any suppliers or customers of any member of the Buyers' Group in the ordinary course of the operation of its own business or communicating with employees of the Transferring Companies (where required and in conjunction with the Sellers) in order to comply with their legal obligations in relation to works council or other consultation obligations, subject to any such communication being approved in advance by the Sellers' Representative (such approval not to be unreasonably withheld or delayed). In the event that the Buyers' Group wishes to issue a communication to the Employees prior to Completion, it should provide such communication to the Sellers' Representative and the Sellers' Representative shall issue such communication to the Employees if it (acting reasonably) determines that it is appropriate to do so.
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6.3

Reorganisation

- (a) The Sellers shall use their respective reasonable endeavours to procure that the Reorganisation is completed as soon as reasonably practicable following the date of the Put Option Agreement.
 - (b) On or before the date of this Agreement the Sellers' Representative shall update the Buyer on the status and progress of the Reorganisation, and every 30 days after such date until the date of Completion the Sellers' Representative shall keep the Buyer updated on the progress of the Reorganisation and shall take into due consideration any reasonable suggestion made by the Buyer on the implementation of the Reorganisation.
 - (c) If the Sellers in their reasonable judgement determine that any individual step of the Reorganisation will result in an adverse change that is material to the proposed position of the Business at completion of the Reorganisation (as reflected in the Transaction Perimeter Summary), the Sellers' Representative will notify the Buyer in advance of taking any actions in respect of such step and take into account their reasonable suggestions.
 - (d) The Sellers shall procure that the Reorganisation is implemented in accordance with applicable Law and (without limitation) the following principles:
 - (i) any applicable exemption from transfer taxes, VAT and stamp duties is to be properly claimed, provided that the cost of making such a claim is proportionate to the saving being made;
 - (ii) there is a legal and technical basis for adopting any Tax treatment;
 - (iii) each transfer of shares, assets or a business shall be pursuant to a written agreement between the transferor and transferee;
 - (iv) where local law requires consultation to take place with works councils or similar bodies or other consultation procedures to be followed, the parties acknowledge and agree that the Reorganisation will be carried out subject to those requirements;
 - (v) the Sellers' Representative and the Buyer shall continue after the date of the Put Option Agreement to agree in good faith the Transaction Comms and the content of any communications by a member of the Sellers' Group with employees of, landlords of, suppliers to, or customers of the Business or any Authority in connection with the Reorganisation or the Transaction shall, to the extent practicable, be discussed with the Buyer in advance and the Sellers shall take into account any reasonable comments from the Buyer unless such communication is as set out in the Transaction Comms (as may be amended from time to time by agreement between the Buyer and the Sellers' Representative) (save that nothing in this Agreement shall prevent any member of the Sellers' Group from contacting any suppliers or customers of any member of the Sellers' Group in the ordinary course of the operation of its own business unrelated to the Reorganisation or the Transaction);
 - (vi) other than as set out in the "Transferring IN" column in the Transaction Perimeter Summary, no assets or liabilities shall be transferred or assumed by the Transferring Companies from any member of the Sellers' Group without the prior written consent of the Buyer, including (but not limited to) any cash, receivables from or payables to the Excluded Companies, Tax assets or Tax liabilities in each case except to the extent transferred within a Transferring Company, or prepayments in respect of any Excluded Asset;
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- (vii) other than as set out in the "Transferring OUT" column in the Transaction Perimeter Summary, no unregistered IPR owned by a Transferring Company shall be transferred out of any Transferring Company to any member of the Sellers' Group (other than a Transferring Company) without the prior written consent of the Buyer;
 - (viii) there will be no material impact on the covenant supporting the UK DB Pension Schemes;
 - (ix) if the Sellers (acting reasonably) consider it to be necessary, the Trustees of the UK DB Pension Schemes will be informed of the Reorganisation steps relevant to the covenant supporting the UK DB Pension Schemes prior to implementation;
 - (x) each transfer of a Transferring Employee to a Transferring Company under the Reorganisation shall be on terms which are not materially different to their existing terms which have been Disclosed;
 - (xi) the Sellers may replace an individual who is marked as "proxy" in the document contained in the Data Room at 2.12.10.5 "Updated Merlin Census with Salary for VDR - as of Oct 21 2022.xlsx" (the "**Proxy Employee**") with an alternative employee (the "**Proxy Replacement**") if:
 - (A) the Seller reasonably considers that Proxy Replacement is equally aligned to the Business and/or to the skills, knowledge, experience and client relationships needed to successfully operate the Business than the Proxy Employee;
 - (B) the replacement (together with all other replacements made in accordance with this Clause) does not (i) materially affect the overall mix of grades, skills or (ii) materially increase the overall employment costs or severance costs, of the group of Employees who are marked proxy at the date of this Agreement; and
 - (C) The assessment will be made in good faith to ensure that the Employees are those who have the skills, knowledge, experience and client relationships needed to successfully operate the Business.
 - (e) The Buyer acknowledges that the transfer of the Transferring Companies contemplated by this Agreement is not intended to convey to the Buyer any right, title or interest in any asset that is: (i) the Excluded Companies; (ii) the Excluded Marks (but without limiting any of the rights expressly granted in and to the Excluded Marks in favour of the Buyer in any Transaction Document) (iii) the Retained Customer Contracts; (iv) all books, records and files of Parent and its Associates, other than the books and records and files of the Transferring Companies or to the extent primarily relating to the Business; (v) the assets, properties and rights associated with Parent's consolidated centralised support functions or network transport facilities used to provide the services that Parent and its Associates will provide after Completion under the Transaction Documents; (vi) any payments (or related credits) received by the Transferring Companies whether before or after Completion in relation to the Indefeasible Rights of Use Agreement between Atlantic Crossing Ltd and Deutsche Telekom AG dated 30 June 1998 (as amended); (vii) Domain Names (with the exception of the Transferring IP Addresses); (viii) all assets and liabilities relating to operations in Russia; and (x) the assets listed in Schedule 8(*Excluded Assets*) (with all such assets, properties, Equity Interests and rights described in this sentence whether held by an Excluded Company or otherwise, being referred to as the "Excluded Assets").
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- (f) Subject to and without limiting any warranties, covenants and agreements of the Sellers under this Agreement or the other Transaction Documents, the Buyer agrees that the Transferring Companies shall assume or retain and be responsible for, from and after Completion, all of the liabilities and obligations of the Sellers or any of their Associates to the extent relating to, arising out of or resulting from the ownership, operation, or use the Transferred Assets, whether incurred before, on or after Completion other than to the extent such liabilities have already been paid for or discharged prior to the Effective Time, other than the Excluded Liabilities, (with all such liabilities and obligations described in this sentence being referred to collectively as the "Assumed Liabilities").
- (g) Subject to Clause 6.4, in the event it is determined in the two year period following Completion that: (i) any asset that constitutes a Transferred Asset that should have been transferred to the Transferring Companies in accordance with Clause 6.3(a) was not so transferred, the Sellers shall procure that such asset shall be promptly transferred to the applicable Transferring Company; and (ii) any liability or obligation that constitutes an Assumed Liability that should have been assumed or retained by the Transferring Companies in accordance with Clause 6.3(f) but was not assumed or retained, the Sellers and the Buyer shall cause the applicable Transferring Company promptly to assume such liability or obligation, without the payment of consideration.
- (h) Subject to Clause 6.4, in the event it is determined in the two year period following Completion that: (i) any asset that is an Excluded Asset that should have been retained by or transferred to an Excluded Company in accordance with Clause 6.3(e) was retained by or transferred to the Transferring Companies, the Buyer shall cause the applicable Transferring Company promptly to transfer such asset to an Excluded Company designated by the Sellers; and (ii) any Excluded Liability that that should not have been assumed or retained by the Transferring Companies in accordance with Clause 6.3(f) but was assumed or retained by the Transferring Companies, such liability shall be promptly assumed by an Excluded Company designated by the Sellers.
- (i) In the event that any transfer of an asset or assumption of a liability occurs under Clause 6.3(g) or 6.3(h):
 - (i) the Sellers shall be solely responsible for, and shall pay when required, any stamp duty, registration fees or other third party costs, and any other sales or transfer Tax;
 - (ii) the transfer or assumption shall take place between the transferor and transferee at nominal consideration; and
 - (iii) the Parties will each account to the other so as to achieve the commercial outcome which would have existed if the relevant asset or liability had been in the correct company at Completion.
- (j) To the extent that the Reorganisation is not completed by Completion, the Sellers shall procure that the Sellers' Group shall provide all reasonable assistance and actions required by the Buyer's Group to enable the Reorganisation to be completed as soon as practicable following Completion and for the avoidance of doubt the Buyer shall be entitled to complete the Reorganisation in any manner it, in its sole discretion, determines provided that it shall follow the principles set out in the Transaction Perimeter Summary.

6.4 **Consents and Unassigned Assets**

- (a) Prior to Completion, the Sellers shall, and shall cause each of their Associates to use reasonable endeavours:
 - (i) to novate the contracts set out in Schedule 16 (*Contracts for novation*) to the Buyer or a Transferring Company; and
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- (ii) following a discussion with the Buyer to take any reasonable steps requested by the Buyer in connection with any other change of control consents which may be required in relation to the Material Contracts,

in each case with regards to the obligations at this Clause 6.4(a) the Sellers shall, and shall cause each of their Associates to, comply with the reasonable instructions of the Buyer in connection with any communications with third parties which may be required in connection with the obligations set out at this Clause 6.4(a).

- (b) Notwithstanding anything to the contrary contained in this Agreement, but subject to Clause 6.4(d), to the extent that the conveyance, transfer, assignment, assumption, or delivery or attempted conveyance, transfer, assignment, assumption, or delivery to or from the Transferring Companies, as the case may be, of any Transferred Asset, Assumed Liability, Excluded Asset or Excluded Liability, as applicable, or any claim or right or any benefit arising thereunder or resulting therefrom, whether undertaken in connection with the Reorganisation or the transactions contemplated by the Transaction Documents, is prohibited by any applicable Law or would result in a material violation or breach of contract, or would require any material third-party authorisations, approvals, consents, novations, or waivers (other than approvals constituting condition which are expressly dealt with under Clause 5 (*Conditions and Termination*)), which are separately governed by Clause 5 (*Conditions and Termination*)), and such authorisations, approvals, consents, novations, or waivers have not been obtained, or such violation or breach has not been cured, prior to Completion (all such assets, claims and rights, and the associated obligations attendant thereto, being hereinafter referred to collectively as the "**Unassigned Assets**"), Completion shall proceed without the conveyance, transfer, assignment, assumption, or delivery of such Unassigned Asset and there shall be no adjustment to the Consideration and the conveyance, transfer, assignment, assumption, or delivery of each such Unassigned Asset will automatically be deferred and will not occur until all such legal impediments are removed or such authorisations, approvals, consents, novations, or waivers have been obtained. Notwithstanding the foregoing, the Excluded Companies, or the Transferring Companies, as applicable, will thereafter hold such Unassigned Assets for the benefit of the Buyer or the Transferring Companies, or the Excluded Companies, as applicable, until the consummation of the conveyance, transfer, assignment, assumption, or delivery thereof. Subject to Clause 6.4(d) and without limiting the foregoing, the parties shall use reasonable efforts, for two (2) years following Completion, and cooperate with each other, to obtain promptly such authorisations, approvals, consents, novations, or waivers, remove any legal impediment or cure any such violation or breach as necessary to convey, transfer, assign, assume, or deliver such Unassigned Assets. Pending such authorisation, approval, consent, novation, or waiver, or the cure of any such violation or breach, the parties shall cooperate with each other in any mutually agreeable, reasonable and lawful arrangements designed to assert any rights under such Unassigned Asset and provide: (i) to the intended transferee the benefits burdens and obligations of such Unassigned Asset as if such Unassigned Asset was not an Unassigned Asset and had been conveyed, transferred, assigned, assumed, or delivered to the Transferring Companies or the Excluded Companies, as applicable, at Completion; and (ii) to the intended transferor the benefits, burdens and obligations that it would have obtained had the Unassigned Asset not been an Unassigned Asset and instead had been conveyed, transferred, assigned, assumed, or delivered at Completion in the manner contemplated by this Agreement. Once the authorisation, approval, consent, novation, or waiver for the conveyance, transfer, assignment, assumption, or delivery of any such Unassigned Asset is obtained, or such violation or breach is cured, the Sellers or the Buyer, as applicable, shall, or shall cause its applicable Associates to, complete the conveyance, transfer, assignment, assumption, or delivery of such Unassigned Asset to the intended transferee for no additional cost to the other party.
 - (c) Subject Clause 6.4(d), to the extent that any such Unassigned Asset cannot be transferred or the full benefits of use of any such Unassigned
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Asset cannot be provided to the intended transferee at or following Completion pursuant to Clause 6.4(a), then the Buyer and the Sellers or one of their Associates shall enter into such mutually agreeable arrangements (including under the Transaction Documents or under additional subleasing, sublicensing or subcontracting arrangements) to provide to the Parties hereto the operational and economic equivalent, to the greatest extent permitted by applicable law, of obtaining such authorisation, approval, consent, novation, waiver, or removal of the legal impediment, and the performance by the intended transferee of the obligations thereunder in each case, to place the intended transferee in the same position as if such Unassigned Asset had been conveyed, transferred, assigned, assumed, or delivered to the Transferring Companies or the Excluded Companies, as applicable, at Completion in the manner contemplated by this Agreement. Unless provided otherwise in the Parties' arrangements: (i) the intended transferor of the Unassigned Asset shall hold for and pay to, or cause one or more of its Associates to hold for and to pay to, the other party all income, proceeds, and other monies received by the intended transferor or any of its Associates in connection with its continuing ownership, operation, or use of the Unassigned Asset in connection with the arrangements under this Clause 6.4(c); and (ii) the intended transferee of the Unassigned Asset shall assume and pay to the other party, promptly upon receipt of any invoice from the other party, all liabilities associated with owning, operating or using the Unassigned Asset by the intended transferee of such Unassigned Asset or its Associates in connection with the arrangements under this Clause 6.4(c).

- (d) Notwithstanding anything to the contrary contained in this Clause 6.4 and unless provided otherwise in the Parties' arrangements: (i) all obligations of any party under any provision of this Clause 6.4 shall lapse on the second anniversary of Completion, (ii) the Buyer shall have no obligation to make payments or incur any liability to obtain any authorisation approval, consent, novation or waiver or to effect any of the other transfers or transactions contemplated by this Clause 6.4 (other than mandated filing, recordation or similar fees payable to any Authority or as otherwise expressly contemplated by the Transaction Documents); (iii) no party shall be required to seek any authorisation, approval, consent, novation or waiver or to cure any violation or breach for any Contract that: (A) involved payments or benefits received or payments made by any Transferring Company or any other member of the Sellers Group of less than \$1,000,000 during the year ended December 31, 2021; (B) involves payments or benefits to be received or payments made or Liabilities incurred by any Transferring Company or any other Associate of the Sellers reasonably expected to be less than \$1,000,000 during the year ending December 31, 2022; or (C) is scheduled to expire within 90 days or can be terminated on 90 days or less notice without material liability; and (iv) the failure to receive any such authorisations, approvals, consents, novations or waivers or to effect any of the other transfers or transactions contemplated by this Clause 6.4 shall not be taken into account with respect to whether any Condition has been satisfied.

6.5 **Financing**

The Buyer acknowledges and agrees that the obtaining of any financing is not a condition to Completion, and reaffirms its obligation to consummate the Transaction irrespective of and independent from the availability of any third party financing arrangements, subject only to satisfaction or waiver in accordance with Clause 5.8) of the Conditions and subject to the Sellers complying with their obligations under Schedule 4 (*Completion formalities*).

6.6 **Accounts**

- (a) The Sellers shall deliver to the Buyer the audited version of the Accounts along with an unqualified audit opinion no later than 120 days after the date of the Put Option Agreement (the "**Audited Accounts**").
- (b) The Audited Accounts shall be the same as the Accounts save for any Permitted Variances.
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6.7 **U.S. Tax Election**

- (a) Subject to Clause 6.7(b), the Buyer shall make an election under Section 338(g) of the U.S. Internal Revenue Code with respect to each eligible Transferring Company and provide copies of the requisite completed and signed IRS Form(s) 8023 to the Sellers on the date of Completion.
- (b) At least thirty (30) days prior to Completion the Buyer shall:
 - (i) provide a draft of the requisite IRS Form(s) 8023 to the Sellers' Representative and give them reasonable opportunity to review and provide comments on the same; and
 - (ii) incorporate all reasonable comments which the Sellers' Representative makes in respect of the draft.
- (c) The Parties shall allocate the Consideration (including any adjustments referred to at Clause 4 (*Adjustments to Consideration*)) pursuant to this Agreement in accordance with Section 1060 of the Code (including among any assets of a Transferring Company that is disregarded entity as separate from the Sellers for U.S. federal income tax purposes), and with respect to any Transferring Company for which a Section 338 Election is made, shall be further allocated to the assets of such Transferring Company in accordance with Treasury Regulations Section 1.338-6 (and any similar provision of state or local Laws, as appropriate).
- (d) After the delivery of the Completion Statements the Sellers shall promptly (but in any event no later than thirty (30) days thereafter) deliver to the Buyer an allocation statement (the "**Allocation Statement**") prepared pursuant to the requirements in Clause 6.7(c).
- (e) The Buyer, the Sellers and the Transferred Companies shall file all Tax Returns and relevant Tax forms and information reports in a manner consistent with the allocation pursuant to the Allocation Statement.

6.8 Prior to Completion, the Sellers and the Buyer shall procure that the relevant members of the Sellers' Group (which includes Level 3) and the Buyer's Group complies with their respective obligations under the Separation Planning Protocol. For purposes of those activities and to address the resolution of any issues arising under the Separation Planning Protocol, Schedule 8 (*Governance*) of the Transitional Services Agreement will be binding on the Sellers, Level 3 and the Buyer from the date of this Agreement. For the avoidance of doubt, completion of the activities under the Separation Planning Protocol is not a condition to Completion.

7 **COMPLETION**

7.1 Completion shall take place remotely or at the offices of the Sellers' Solicitors on the first day of the month which follows the calendar month in which all of the Conditions have been satisfied or waived (such date being the "**Condition Satisfaction Date**") provided that if there are not at least 12 Business Days between the Condition Satisfaction Date and the first day of the next calendar month then Completion shall take place on the first day of the second calendar month following the Condition Satisfaction Date (or such other date as the parties shall agree).

7.2 On Completion, the Sellers and the Buyer shall comply with their respective obligations in Schedule 4 (*Completion formalities*).

7.3 If any of the transactions set out in Schedule 4 (*Completion formalities*) does not take place as provided in that schedule, the Buyer, in the case of non-compliance by the Sellers, or the Sellers, in the case of non-compliance by the Buyer, may at their election and, in each case, without prejudice to their other rights and remedies:

- (a) defer Completion to the first day of the following calendar month; or
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- (b) proceed to Completion so far as is practicable on the original proposed date (which, for the avoidance of doubt, must be on the first day of a calendar month); or
- (c) following the deferral at Clause 7.3(a) (if the transactions have still not taken place) terminate this Agreement in which case the provisions of Clause 20 (*Termination*) shall apply.

8 **SELLERS' WARRANTIES**

8.1 The Sellers warrant to the Buyer that each of the following statements is now and will at Completion (by reference to the facts and circumstances existing at the relevant time) be true and accurate:

- (a) the information contained in Schedule 2 (*Other Transferring Companies*) is true, complete and accurate;
- (b) the only directors of a Transferring Company are the persons specified in relation to that Transferring Company in Schedule 2 (*Other Transferring Companies*);
- (c) the Sellers have the power and authority to enter into the Transaction Documents and to fully perform their obligations under them and the Transaction Documents will, when executed, constitute valid, legal and binding obligations on the Sellers in accordance with their terms;
- (d) other than the Conditions, the Sellers have obtained all applicable governmental, statutory, regulatory or other consents, licences, waivers or exemptions required to empower them to enter into and to perform their obligations under the Transaction Documents;
- (e) other than the Conditions, the entry into and the exercise by the Sellers of their rights and performance of their obligations under the Transaction Documents and the transactions contemplated by them will not constitute a breach or give rise to a default under any applicable laws or regulations or any order, decree, judgement, contract or other obligation binding on them (including any provision of their constitutional documents) which has or could have a material adverse effect on their ability to execute or perform their obligations under the Transaction Documents;
- (f) the Sellers are not a party to any litigation, arbitration or administrative proceedings, nor are they the subject of any governmental, regulatory or official investigation or enquiry which in each case is in progress and which has a material adverse effect on their ability to execute or perform their obligations under the Transaction Documents;
- (g) no action or steps have been taken by the Sellers, nor has legal proceedings started or been threatened against any Seller for:
 - (i) its winding up or dissolution;
 - (ii) it to enter into any arrangement or composition for the benefit of creditors in any country or jurisdiction, including but not limited to a bankruptcy case under Title 11 of the United States Code or an assignment for the benefit of creditors; or
 - (iii) the appointment of a receiver, administrator, administrative receiver, liquidator, supervisor, compulsory manager, trustee or similar person of any of its revenues or assets,

and none of the Sellers are unable to pay its debts when due within the meaning of applicable insolvency legislation.

8.2 The Sellers' Guarantor warrants to the Buyer that each of the following statements is now and will at Completion (by reference to the facts and circumstances existing at the relevant time) be true and accurate:

- (a) the Sellers' Guarantor has the power and authority to enter into the Transaction Documents and to fully perform its obligations under them and the Transaction Documents will, when executed, constitute valid, legal and binding obligations on the Sellers' Guarantor in accordance with their terms;
- (b) other than the Conditions, the Sellers' Guarantor has obtained all applicable governmental, statutory, regulatory or other consents, licences, waivers or exemptions required to empower them to enter into and to perform their obligations under the Transaction Documents;
- (c) other than the Conditions, the entry into and the exercise by the Sellers' Guarantor of its rights and performance of its obligations under the Transaction Documents and the transactions contemplated by them will not constitute a breach or give rise to a default under any applicable laws or regulations or any order, decree, judgement, contract or other obligation binding on them (including any provision of its constitutional documents) which has or could have a material adverse effect on its ability to execute or perform its obligations under the Transaction Documents;
- (d) the Sellers' Guarantor is not a party to any litigation, arbitration or administrative proceedings, nor are they the subject of any governmental, regulatory or official investigation or enquiry which in each case is in progress and which has a material adverse effect on its ability to execute or perform its obligations under the Transaction Documents;
- (e) no action or steps have been taken by the Sellers' Guarantor, nor has legal proceedings started or been threatened against the Sellers' Guarantor for:
 - (i) its winding up or dissolution;
 - (ii) it to enter into any arrangement or composition for the benefit of creditors in any country or jurisdiction, including but not limited to a bankruptcy case under Title 11 of the United States Code or an assignment for the benefit of creditors; or
 - (iii) the appointment of a receiver, administrator, administrative receiver, liquidator, supervisor, compulsory manager, trustee or similar person of any of its revenues or assets,

and the Sellers' Guarantor is not unable to pay its debts when due within the meaning of applicable insolvency legislation.

8.3 The liability of the Sellers in connection with this Agreement is limited in accordance with the provisions of Schedule 5 (*Seller protection provisions*).

9 **SPECIFIC INDEMNITIES**

9.1 The Sellers shall indemnify the Buyer fully on demand in respect of all Losses incurred, suffered or sustained by any member of the Buyer's Group resulting from or arising out of any of the following:

- (a) the steps and actions taken by any member of the Sellers' Group and/or any Transferring Company to give effect to the Reorganisation (including but not limited to for the avoidance of doubt any claim against any member of the Transferring Companies if and to the extent it relates to the Excluded Assets) (provided always that in no circumstances shall the Sellers have any liability to Buyer / Buyer's Group under this Clause 9.1(a) in relation to (i) the Assumed Liabilities (other than in respect of the steps or actions relating to the Reorganisation pursuant to which they were assumed); and (ii) any fees, costs or expenses incurred by the Buyer or any member of the Buyer's Group in connection with: the consideration of the Reorganisation; negotiation of this Agreement or any other Transaction Document; and/or review of any document or proposal relating to the consummation of any steps contemplated under the Reorganisation whether incurred before, on or after the date of this Agreement);
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- (b) to the extent that the Reorganisation is not complete prior to Completion, all fees, costs and expenses reasonably incurred by the Buyer or any member of the Buyer's Group in connection with completing the Reorganisation or arising out of the failure by the Sellers to have completed the Reorganisation on or before Completion;
- (c) the termination of employment of any employees of the Transferring Companies by a member of the Sellers' Group prior to Completion or any failure by a member of the Sellers' Group prior to Completion to comply with any information or consultation obligations in respect of the Reorganisation (including without limitation the transfer of the employment of the Retained Employees), save to the extent that such failure arises from any act or omission by the Buyer Group to comply with its legal obligations;
- (d) The employment or the termination of the employment of any Retained Employees who remain in the employment of any Transferring Company at Completion (but excluding any liability arising from any discriminatory acts or omissions of the dismissing party) subject to the following procedure:
 - (i) if Buyer or Seller become aware that a Retained Employee remains or alleges that they remain in the employment of a Transferring Company after Completion, they will notify the other party within 7 days of becoming aware;
 - (ii) within 14 days of such notification, Seller may make or procure an offer of employment to the Retained Employee or seek to reach agreement on a settlement of their claims and the Buyer will provide reasonable co-operation; and
 - (iii) if the Retained Employee remains or alleges that they remain in employment with a Transferring Company 28 days after the notification referred to at Clause 9.1(d)(i), the Transferring Company will dismiss the Retained Employee within a further 28 days and shall use reasonable endeavours to hold an individual consultation meeting (in person or electronically) with such Retained Employee prior to dismissal;
- (e) any claim by an Employee or former employee or contractor or former contractor of a Transferring Company for underpayment of holiday pay in respect of any holiday taken in any period prior to Completion;
- (f) the claims brought by former employees in France referred to in the Data Room at 2.101.17;
- (g) any claim by an Employee or former employee of a Transferring Company in France related to the validity and enforceability of their working time scheme set in days over the year ("forfait-jours"), including notably any overtime hours and damages claimed, in respect of any period prior to Completion; and
- (h) a Transferring Company is or becomes liable to make a payment under the agreement for the supply of on rail services between a Transferring Company and Telent Technology Services Limited ("**Telent**") in respect of any debt which arises under Section 75 or 75A of the Pensions Act 1995 in relation to Telent's participation in the Telent Technology Services Limited (Omnibus) Section of the Railways Pension Scheme.

10 BUYER WARRANTIES

- 10.1 The Buyer warrants that the statements set out at paragraph 1 to paragraph 6 (inclusive) of Schedule 9 (*Buyer warranties*) are now and will at Completion (by reference to the facts and circumstances existing at the relevant time) be true and accurate in relation to itself only and warrants that the statement set out at paragraph 7 of Schedule 9 (*Buyer warranties*) is now true and accurate.
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11 POST-COMPLETION MATTERS

11.1 Release of guarantees

- (a) Following Completion the Buyer shall use reasonable endeavours to procure the release and discharge as soon as reasonably practicable the guarantees, indemnities or other assurances entered into by the Sellers or any member of the Sellers' Group which relate in whole or in part to the Business listed in Schedule 10 (*Guarantees*) (the "**Guarantees**").
- (b) Following Completion the Buyer shall:
 - (i) promptly supply to each recipient of a Guarantee (each an "**Assured party**") such financial and other information relating to the Buyer's Group as the Assured party may reasonably request in order to replace such Guarantee;
 - (ii) enter into and arrange for a suitable member of the Buyer's Group to provide such guarantee, indemnity or other assurance or commitment or other form of security in favour of the Assured party or arrange for such third party financial guarantee, such bond, letter of credit or other form of assurance to be issued by a financial institution of sufficient credit rating as the Assured party may reasonably require for such purposes as a condition of release or discharge of any guarantee, indemnity or other assurance provided that, in each case, the Buyer shall not be required to offer a guarantee under which the amount of its liability is greater than the limit of liability set out above in relation to the Guarantee;
 - (iii) promptly to arrange and attend such meetings with the Assured party as may be reasonably necessary to obtain any relevant release or discharge; and
 - (iv) keep the Sellers' Representative reasonably informed of the progress it is making in obtaining all releases and discharges and, upon written request by it, provide an update of such progress,

and shall indemnify the Sellers and each member of the Sellers' Group from and against all losses suffered or incurred by it in connection with it not being released from any such guarantees, indemnities or other assurances on Completion (and pay to the Sellers an amount equivalent to all such losses on demand) provided that the Sellers shall, and shall procure that each member of the Sellers' Group take all reasonable steps to mitigate any such losses (without restricting in any way the ability of the Sellers' Group to operate their business in the ordinary course).

11.2 Access to records

- (a) Promptly following Completion the Sellers shall send to the Buyer at its registered office copies of any material books, records and papers of any Transferring Company not held by such Transferring Company.
- (b) For a period of six years following Completion, the Buyer shall (and shall procure that each other member of the Buyer's Group and their respective agents and advisers shall) upon written request and subject to them having entered into appropriate confidentiality agreements provide the Sellers with such information of any Transferring Company as the Sellers may reasonably require in order to comply with any regulatory or tax reporting obligations.

11.3 Employee Matters

The Parties shall comply with their respective obligations under Schedule 13 (*LTIP/Retention*).

11.4 **Activities**

The provisions of Schedule 15 (*Additional Covenants*) shall apply to the activities of the Sellers following Completion.

12 **SELLERS GUARANTEE**

12.1 In consideration of the entry of the Buyer into this Agreement, the Sellers' Guarantor irrevocably and unconditionally as primary obligor undertakes and guarantees to the Buyer on demand the performance by each Seller of all its obligations in respect of each Transaction Document, including the due and punctual payment of all sums now or subsequently payable by any Seller to the Buyer under any Transaction Document.

12.2 If a Seller defaults in the performance of any obligations under any of the Transaction Documents, including the due and punctual payment of any sums now or subsequently payable by a Seller to the Buyer under this Agreement, the Sellers' Guarantor shall on demand perform (or procure the performance of) that obligation, so that the same benefits shall be conferred on the Buyer as would have been received if the relevant Seller had duly performed that obligation and indemnify the Buyer on demand from and against all Losses suffered or incurred by the Buyer as a result or in connection with any default by a Seller in the performance of its obligations.

12.3 The obligations and liabilities of the Sellers' Guarantor in this Clause 12 (*Sellers guarantee*) are continuing obligations and liabilities which shall remain in force until all the obligations of the Sellers under the Transaction Documents have been performed.

12.4 The obligations of the Sellers' Guarantor under this Clause 12 (*Sellers guarantee*) shall not be affected by anything which, but for this Clause 12 (*Sellers guarantee*), might operate to release or otherwise exonerate it from or affect its obligations.

12.5 The Buyer may make one or more demands under this Clause 12 (*Sellers guarantee*).

13 **ANNOUNCEMENTS AND CONFIDENTIALITY**

13.1 Subject to the following provisions of this Clause 13 (*Announcements and confidentiality*), no announcement shall be made in relation to this Agreement unless:

- (a) it is agreed in writing by the Buyer and the Sellers' Representative (the "**Agreed Announcement**"); or
- (b) it is required to be made by law or by any securities exchange or regulatory or governmental body to which a party or its Associates is subject, in which case that party shall to the extent reasonably practicable consult with the other party as to the form, content and timing of the announcement.

13.2 Nothing in this Agreement shall restrict the Buyer from communicating with the employees of any member of the Buyer's Group, any parties to any contract made with any member of the Buyer's Group and with any current or prospective customer of or supplier to any member of the Buyer's Group in relation to the fact of the acquisition of any Transferring Company or matters incidental to the future operations of any business of any member of the Buyer's Group provided that such communication reflects the Agreed Announcement.

13.3 Nothing in this Agreement shall restrict the Sellers after Completion from communicating with:

- (a) the employees of any member of the Sellers' Group provided that such communication reflects the Agreed Announcement; and
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- (b) any parties to any contract made with any member of the Sellers' Group or with any current or prospective customer or supplier to any member of the Sellers' Group in relation to the fact of the disposal of any Transferring Company provided that such communication reflects the Agreed Announcement.

13.4 Each Seller shall not, and shall procure that each other member of the Sellers' Group shall not at any time disclose any Confidential Information relating to the Transferring Companies or the Buyer's Group unless and then only to the extent that such disclosure is:

- (a) made by a party on a confidential basis to its professional advisers in connection with their provision of professional services;
- (b) made by a party on a confidential basis to its financiers or potential financiers in connection with its financing or refinancing arrangements;
- (c) required by a party in connection with an application for a tax clearance, grant or other concession;
- (d) made under the terms of an announcement permitted by this Agreement;
- (e) required to be made by law or by any securities exchange or regulatory or governmental body to which the disclosing party is subject provided that it shall (to the extent permitted) immediately notify the other party of this fact and take into account its reasonable requirements as to the timing, content and manner of making such disclosure; or
- (f) restricted to information which at the time of disclosure is in the public domain (other than as a result of a breach by the disclosing party or any member of its group of any of the Transaction Documents).

13.5 The Buyer shall not, and shall procure that each other member of the Buyer's Group shall not at any time disclose any Confidential Information relating to the Sellers' Group unless and then only to the extent that disclosure is:

- (a) made by a party on a confidential basis to its professional advisers in connection with their provision of professional services;
- (b) made by a party on a confidential basis to its financiers or potential financiers in connection with its financing or refinancing arrangements;
- (c) required by a party in connection with an application for a tax clearance, grant or other concession;
- (d) made under the terms of an announcement permitted by this Agreement;
- (e) required to be made by law or by any securities exchange or regulatory or governmental body to which the disclosing party is subject provided that it shall (to the extent permitted) immediately notify the other party of this fact and take into account its reasonable requirements as to the timing, content and manner of making such disclosure; or
- (f) restricted to information which at the time of disclosure is in the public domain (other than as a result of a breach by the disclosing party or any member of its group of any of the Transaction Documents).

13.6 The parties shall not, and the Sellers shall procure that no member of the Sellers' Group and the Buyer shall procure that no member of the Buyer's Group shall, disclose or otherwise make use of (and shall use all reasonable endeavours to prevent the publication or disclosure of) the contents or terms of any of the Transaction Documents, unless and then only to the extent that disclosure is:

- (a) made by a party on a confidential basis to its professional advisers in connection with their provision of professional services;
-

- (b) made by a party on a confidential basis to its financiers or potential financiers in connection with its financing or refinancing arrangements;
- (c) required by a party in connection with an application for a tax clearance, grant or other concession;
- (d) made under the terms of an announcement permitted by this Agreement;
- (e) required to be made by law or by any securities exchange or regulatory or governmental body to which the disclosing party is subject provided that it shall (to the extent permitted) immediately notify the other party of this fact and take into account its reasonable requirements as to the timing, content and manner of making such disclosure; or
- (f) restricted to information which at the time of disclosure is in the public domain (other than as a result of a breach by the disclosing party or any member of its group of any of the Transaction Documents).

14 **ASSIGNMENT**

- 14.1 This Agreement shall be binding on and inure for the benefit of the successors and permitted assigns of the parties.
- 14.2 Subject to Clause 14.3 no party may without the written consent of the other assign, transfer, grant any security interest over or hold on trust any of its rights or obligations under this Agreement or any interest in them.
- 14.3 The Buyer may without the consent of the Sellers charge and/or assign all or any of its rights under this Agreement to any person by way of security for borrowings.
- 14.4 The Sellers may without the consent of the Buyer assign all or any of their rights under this Agreement to any member of the Sellers' Group provided that before ceasing to be a member of the Sellers' Group any assignee shall assign all assigned rights back to the Sellers or another member of the Sellers' Group.
- 14.5 In relation to any assignment under Clause 14.3:
 - (a) the assignor shall notify the other party as soon as reasonably practicable (and in any event within two Business Days) of the assignment;
 - (b) any assignee shall not be entitled to receive under this Agreement any greater benefit than the assignor would have been entitled to under this Agreement, and no party shall incur any increase in liability under this Agreement which would not have occurred but for the assignment; and
 - (c) if an obligation to assign back rights has arisen, no person shall be entitled to exercise the rights in question until such assignment has been completed as required.

15 **SELLERS' REPRESENTATIVE**

15.1 **Each Seller:**

- (a) irrevocably and unconditionally appoints Level 3 International Inc. to act on that Seller's behalf in relation to any act, matter or thing required or permitted by the terms of the Transaction Documents and any documents referred to in or ancillary to any Transaction Document, to be done by the Sellers or any of them (the "**Sellers' Representative**");
 - (b) acknowledges that the Buyer is entitled to treat any act, matter or thing done by the Sellers' Representative as binding on all Sellers and is not required to enquire further in respect of such act, matter or thing; and
 - (c) acknowledges that the Buyer may discharge any obligation under the Transaction Documents to give any payment, document, notice or other thing to one or more of the Sellers (including any document served to
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initiate or as part of any Claims against any one or more of the Sellers) by giving it to the Sellers' Representative.

15.2 The Sellers may, acting jointly, replace the Sellers' Representative named in Clause 15.1(a) (or any replacement notified to the Buyer under this Clause) with another Sellers' Representative, who shall be one of the Sellers, provided that the Sellers shall ensure that at all times a Sellers' Representative is validly appointed in accordance with the terms of this Agreement. If for any reason the Sellers' Representative named in Clause 15.1(a) (or its successor) is replaced as the Sellers' Representative under this Agreement, the Sellers shall notify the Buyer of the newly appointed Sellers' Representative and shall promptly provide such evidence of the validity of the appointment as the Buyer may reasonably request. Until the Buyer receives that notification (and, if applicable, evidence), it shall be entitled to treat the Sellers' Representative named in Clause 15.1(a) (or its successor) as the Sellers' Representative for the purposes of this Agreement.

15.3 The Sellers shall bear all costs (including reasonable legal costs) and expenses (including Tax) of the Sellers' Representative.

16 ENTIRE AGREEMENT

16.1 The Transaction Documents contain the entire agreement between the parties, and replace all previous agreements and understandings between them, relating to their subject matter.

16.2 The parties agree that no representations, warranties, undertakings or promises have been expressly or impliedly given in respect of the subject matter of the Transaction Documents, and they are not relying on any representation, warranty, undertaking or promise, other than those which are expressly stated in the Transaction Documents.

16.3 Other than in relation to a statement made fraudulently:

- (a) neither party shall have any right or remedy in respect of any statement (whether negligent or innocent) not set out in the Transaction Documents upon which it relied in entering into the Transaction Documents; and
- (b) the only right or remedy that a party shall have in connection with the Transaction Documents (including for any statement repeated or deemed made in it, whether negligent or innocent) shall be for breach of contract and neither party shall be entitled to rescind or (except as otherwise expressly provided in this Agreement) terminate this Agreement nor shall they have the right to bring a claim in tort or under the Misrepresentation Act 1967 in connection with the Transaction Documents.

16.4 Any terms or conditions which may be implied by law in relation to the Transaction are excluded to the fullest extent permitted by law or, if and to the extent incapable of exclusion, any right or remedy in relation to them is irrevocably waived.

17 NON-RECOURSE

17.1 Any claim under or in connection with a Transaction Document (including its negotiation or performance) may be made only against the persons expressly identified as parties to that Transaction Document (each such person being, in relation to the relevant document, a "**Transaction party**").

17.2 To the maximum extent permitted by applicable law, any person who is not a Transaction party in relation to a Transaction Document (including any shareholder, director, officer, employee, agent or adviser to any Transaction party) (each a "**Non-party**"), shall not have any liability under or in connection with that document (including its negotiation or performance, or in connection with the Warranties or any facts, matters or circumstances which may or might have been Disclosed) and the parties hereby waive and release, and undertake to procure the release and waiver by any Associate of it (including in the case of the Buyer, each member of the Buyer's Group) of, all claims against and liabilities of any Non-party.

17.3 Save with regards to any liabilities to the extent that they have been specifically included in Net Debt or Working Capital, each Seller irrevocably waives, and shall procure that each other member of the Sellers' Group irrevocably waives, in each case with effect from the date of Completion, all claims arising on or before the date of Completion against:

- (a) each Transferring Company; or
- (b) the respective officers, employees and workers of each member of the Buyer's Group,

and undertakes, if any claim is made against any Seller in connection with the sale of the Shares, not to make any claim against or seek any contribution from any such person or any member of the Buyer's Group and undertakes that no other person claiming under or through them will make any such claim or seek any such contribution.

18 **FURTHER ASSURANCE**

Each party shall at the cost of the requesting party execute any document and do anything else that the requesting party reasonably required to give effect to the transfer of the Shares provided for in this Agreement.

19 **COSTS**

Except as provided otherwise in any Transaction Document, each party shall pay the costs and expenses incurred by it in connection with the drafting and negotiation of the Transaction Documents.

20 **TERMINATION**

20.1 Subject to Clause 20.1(a), this Agreement shall automatically terminate with immediate effect and each party's rights and obligations shall cease to have force and effect in the circumstances contemplated by Clause 5.9 or Clause 7.3(c).

- (a) If this Agreement is terminated or terminates in accordance with Clause 20.1:
 - (i) no party shall have any claim under this Agreement except in respect of any rights and liabilities which have accrued in consequence of a breach of this Agreement before termination or under any of the Surviving Provisions; and
 - (ii) the Surviving Provisions and any other provisions which expressly or by implication are necessary for the enforcement or interpretation of this Agreement shall survive termination, and

the Buyer shall return to the Sellers or destroy all documents (including information in electronic form) concerning the any Transferring Company or the Sellers which have been provided to it in connection with this Agreement and will not use or make available to another person information which it or its advisers have been given in respect of any Transferring Company or the Sellers and which is not in the public domain in accordance with the terms of the confidentiality agreement entered into by the Buyer in relation to the Transaction dated 29 April 2022.

21 **PAYMENTS**

21.1 All sums payable under or pursuant to this Agreement shall be paid free of:

- (a) any counterclaim or set-off of any kind; and
- (b) any other deduction or withholding, except those required by law.

21.2 If in relation to any payment by the Buyer to the Sellers or the Sellers to the Buyer any deduction or withholding is required by law, or any amount (other than the Consideration or the payment of the Shareholder Debt Amount (if any)) paid under

this Agreement is subject to Tax (or would have been but for the use of any Buyer's relief or Accounts relief by the Buyer or Sellers relief by the Sellers (as those terms are defined in the Tax Deed)), the payer shall also pay to the recipient such amount as will ensure that the net receipt, after Tax, is the same as it would have been had there been no Tax, deduction or withholding.

- 21.3 Clause 21.2 shall not apply to the extent that the deduction, withholding or Tax would not have arisen but for the payee:
- (a) not being resident for Tax purposes in the case of a Seller the US or in the case of the Buyer the UK; or
 - (b) having assigned its rights under the Agreement.
- 21.4 A Seller which is making any payment under this Agreement and the Buyer shall use reasonable (and which are requested by the Seller) endeavours to ensure that such payment can be paid free from any deduction or withholding, including, for the avoidance of doubt, the Buyer providing the Seller with any reasonable information requested by the Seller and/or completing any forms that the Buyer is validly able to complete as soon as is reasonably practicable to enable that Seller to reasonably satisfy itself that such payment may be made free from deduction or withholding.
- 21.5 If: (i) any payment made under this Agreement (the "**Relevant Payment**") is subject to deduction or withholding; (ii) the provisions of Clause 21.2 of this Agreement apply in respect of the Relevant Payment; and (iii) the Buyer determines that it is entitled to a repayment or rebate in respect of the Relevant Payment pursuant to an applicable double tax treaty (the "**Rebate**"), the Buyer shall:
- (a) Notify the relevant Seller of the Buyer's entitlement to the Rebate;
 - (b) Upon written request from the relevant Seller, use reasonable endeavours to claim the Rebate; and
 - (c) Pay to the Seller the lesser of:
 - (i) the amount of the Rebate, less any reasonable out of pocket costs incurred by the Buyer in connection with obtaining the Rebate; and
 - (ii) the amount by which the Relevant Payment was increased as a result of Clause 21.2 of this Agreement
- 21.6 Any payment required to be made pursuant to this Agreement shall be effected by crediting for same day value the account specified in this Agreement (or such other account as the party may notify to the other on no less than two Business Days' notice) by way of electronic transfer on or before the due day for payment. If a party defaults in making payment when due of any sum payable under this Agreement, its liability shall be increased to include interest on that sum from the date when payment was due until the date of actual payment (after as well as before judgment) at 3% above the official bank rate of the Bank of England in force from time to time. The interest payable shall accrue from day to day and be compounded monthly.
- 21.7 Any payment by the Sellers under this Agreement or the Tax Deed shall, to the extent permitted by law, be treated as reducing the Consideration paid by the Buyer and received by the Sellers for the Shares.

22 **LIABILITY AND RELEASE**

- 22.1 The obligations of the Sellers under this Agreement are several. If any obligation of one or some but not all of the Sellers is, or becomes, illegal, invalid or unenforceable in any respect, that shall not affect or impair the obligations of the other Sellers under this Agreement.
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22.2 Any obligation of the Sellers to the Buyer under this Agreement may in whole or in part be released or compromised by the Buyer in its absolute discretion without in any way prejudicing or affecting the Buyer's rights against any other or others of the Sellers.

23 **EFFECT OF COMPLETION**

Obligations under this Agreement which have not been fully performed by or on Completion and the rights and remedies available under it shall remain in full force and effect despite Completion.

24 **SEVERABILITY**

If any provision of this Agreement is held by a court of competent jurisdiction or arbitral tribunal to be invalid or unenforceable the other provisions shall remain in full force to the fullest extent permitted by law. Any provision of this Agreement held invalid or unenforceable only in part or degree will remain in full force to the extent not held invalid or unenforceable and the provision in question shall apply with any modification that may be necessary to make it valid or enforceable.

25 **WAIVER**

25.1 A failure or delay in exercising any right or remedy under this Agreement shall not constitute a waiver of that right or remedy. A single or partial exercise of any right or remedy shall not prevent the further exercise of that right or remedy. A waiver of a breach of this Agreement shall not constitute a waiver of any other or repeated breach.

26 **THIRD PARTY RIGHTS**

26.1 The parties do not intend any third party to have the right to enforce any provision of this Agreement under the Contracts (Rights of Third Parties) Act 1999 except that any member of the Buyer's Group may enforce and rely on Clause 17.3 but that provision may be terminated, amended or modified in any manner without their written consent.

26.2 The parties may terminate or vary or waive any right or obligation under this Agreement without the consent of any third party.

27 **VARIATIONS**

No variation of this Agreement and any other document entered into in connection with it shall be effective unless it is in writing and signed by or on behalf of each party.

28 **NOTICES**

28.1 Any notice under or in connection with this Agreement must be in English, in writing, signed by or on behalf of the person making it and delivered by hand or sent by recorded delivery post (or airmail, if the destination is outside the country of origin), or email to the relevant party at its address and for the attention of the individual set out below (or as notified in accordance with this Clause).

(a) The Buyer

Address: Colt House, 20 Great Eastern Street, London EC2A 3EH, UK

Email address: [Intentionally omitted]

Attention: General Counsel

(b) The Sellers' Representative and Sellers' Guarantor

Address: c/o Lumen Technologies, Inc., 100 CenturyLink Drive, Monroe, Louisiana 71203

Email address: [Intentionally omitted]

Attention: Stacey W. Goff and Bob McCarthy

With a copy to: Bryan Cave Leighton Paisner LLP

Address: Governors House, 5 Laurence Pountney Hill, London EC4R 0BR

Email address: [Intentionally omitted]

Attention: Andrew Hart

28.2 A party may notify a change to its details specified in Clause 28.1. The new address shall take effect two Business Days after receipt of that notice or such later date as may be specified in the notice.

28.3 Without evidence of earlier receipt, communications complying with Clause 28.1 are deemed received:

- (a) if delivered by hand, at the time of delivery; or
- (b) if sent by "Special Delivery 9.00am/Next Day" or "Recorded Signed For" delivery, at 9.00am on the second Business Day after posting, or (if sent by airmail) fifth, Business Day after posting; or
- (c) if sent by email, at the earlier of:
 - (i) the time a return receipt is generated automatically by the recipient's email server;
 - (ii) the time the recipient acknowledges receipt; and
 - (iii) 24 hours after transmission,

unless the sender receives notification that the email has not been successfully delivered, except that if deemed receipt would occur before 9.00am on a Business Day, it shall instead be deemed to occur at 9.00am on that day and if deemed receipt would occur after 5.00pm on a Business Day, or on a day which is not a Business Day, it shall instead be deemed to occur at 9.00am on the next Business Day. References in this Clause to a time of day are to the time of day at the location of the recipient.

28.4 In proving the giving of a communication, it shall be sufficient to prove that delivery was made to the appropriate address, the communication was properly addressed and posted by prepaid recorded delivery post or prepaid airmail or the email was sent to the appropriate email address and dispatch of transmission from the sender's external gateway was confirmed as specified pursuant to Clause 28.1.

28.5 If a person for whose attention communications must be marked has been specified pursuant to Clause 28.1, a communication will be effective only if it is marked for that person's attention or copied to that person (as the case may be).

28.6 This Clause does not apply to the service of any document required to be served in relation to legal proceedings.

28.7 Unless, otherwise stated, a communication given by any Seller in accordance with this Clause shall be deemed to have been given on behalf of all of the Sellers.

29 **SERVICE OF PROCESS**

- 29.1 Each of the Sellers and the Sellers' Guarantor irrevocably appoint Lumen Technologies APAC Holdings Limited (company number 13517649) at its registered office as their agent for service of process in relation to any English court proceedings in connection with this Agreement.
- 29.2 Service on the agent (as named above or notified in accordance with this Clause 29 (*Service of process*)) shall be deemed to be valid service whether or not the process is received by the Seller.
- 29.3 If an agent changes its address to another address in England, the relevant party who appointed them ("**Appointer**") shall within five Business Days notify the other party of the new address.
- 29.4 If an agent ceases to be able to act as agent or to have an address in England, the Appointer shall within five Business Days notify the other party of the appointment of a new agent acceptable to the other party, failing which the other party may serve proceedings on the Appointer in the Financial Times newspaper stating how the Appointer may obtain a copy of the proceedings. The proceedings shall be deemed to be served on the date of publication of the advertisement.
- 29.5 Nothing in this Agreement shall affect any party's right to serve process in any other manner permitted by law.

30 **COUNTERPARTS**

This Agreement may be executed in any number of counterparts, which shall each constitute an original and together constitute one agreement. If this Agreement is executed in counterpart, it shall not be effective unless each party has executed at least one counterpart. Facsimile, pdf or other electronic signatures shall be valid and binding to the same extent as original "wet ink" signatures.

31 **GOVERNING LAW AND JURISDICTION**

- 31.1 This Agreement and any non-contractual obligations arising in connection with it (and, unless provided otherwise, any document entered into in connection with it) shall be governed by and construed in accordance with English law.
- 31.2 All disputes between the parties arising under or in connection with this Agreement, including any questions regarding its existence, validity, breach or termination but excluding any dispute which is resolved pursuant to the provisions of Schedule 7 (*Completion Statements*) shall be finally settled under the Rules of Arbitration of the London Court of International Arbitration ("**LCIA**") in effect at the time of arbitration (the "**Rules**"). In the event of any conflict between the Rules and this Agreement, the provisions of this Agreement shall prevail.
- 31.3 The number of arbitrators shall be three. The claimant and the respondent shall each nominate one member to the Arbitral Tribunal (as defined in the Rules). The seat, or legal place, of arbitration shall be London, UK. The language to be used in the arbitral proceedings shall be English. Service of any request for arbitration made under Clause 31.2 must be made in accordance with the provisions of Clause 28 (*Notices*).
- 31.4 The Arbitral Tribunal shall award to each party, if any, as determined by the Arbitral Tribunal in accordance with Article 28.4 of the Rules, all of their respective Costs and Fees. "Costs and Fees" mean all reasonable pre-award expenses of the arbitration, including the arbitrators' fees, administrative fees, travel expenses, out-of-pocket expenses (such as copying and telephone), court costs, witness fees and reasonable, documented attorneys' fees (other than on a contingent fee basis).
- 31.5 Notwithstanding Clause 31.2, any provision in the Rules that is void, unenforceable or otherwise impermissible under English law shall not be deemed to be incorporated into this Agreement and shall not apply in any arbitration conducted under this Agreement.
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Signed by the duly authorised representatives of the parties on the date of this Agreement

EXECUTION PAGE

Signed by
/s/ Stacey W. Goff
for and on behalf of **Global Crossing Telecommunications, Inc.**)
Stacey W. Goff
Duly authorised person

Signed by
/s/ Stacey W. Goff
for and on behalf of **Level 3 International Services, Inc.**)
Stacey W. Goff
Duly authorised person

Signed by
/s/ Stacey W. Goff
for and on behalf of **Level 3 International, Inc.**)
Stacey W. Goff
Duly authorised person

Signed by
/s/ Stacey W. Goff
for and on behalf of **CenturyLink Communications, LLC**)
Stacey W. Goff
Duly authorised person

Signed by
/s/ Stacey W. Goff
for and on behalf of **Level 3 Parent, LLC**)
Stacey W. Goff
Duly authorised person

Signed by
/s/ Caroline Griffin Pain
for and on behalf of **Colt Technology Services Group Limited**)
Caroline Griffin Pain
Duly authorised person

**DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934**

December 31, 2022

Lumen Technologies, Inc. ("Lumen", the "Company", "we" or "us") has two classes of securities registered under Section 12 of the Securities Exchange Act of 1934 (as amended, the "Exchange Act"): (i) Common Stock, par value \$1.00 per share ("Common Stock"), and (ii) Series CC Junior Participating Preferred Stock Purchase Rights ("Purchase Rights"), both of which are listed on The New York Stock Exchange.

DESCRIPTION OF COMMON STOCK

The following is a summary description of the rights of the holders of the Common Stock and related provisions of the Company's Articles of Incorporation, as amended and restated (the "Articles"), and bylaws, as amended and restated (the "Bylaws"), and applicable Louisiana law. This summary is intended to provide a general description only, does not purport to be complete and is qualified in its entirety by reference to, and should be read in conjunction with, the Articles, Bylaws and applicable Louisiana law.

General

Lumen is currently authorized under its Articles to issue an aggregate 2.202 billion shares of capital stock, consisting of 2.200 billion shares of Common Stock, \$1.00 par value per share, and 2 million shares of preferred stock, \$25.00 par value per share. All of the outstanding capital stock of the Company is fully paid and non-assessable.

Dividends

Holders of our Common Stock are entitled to receive dividends when, as and if declared by our board of directors, out of funds legally available therefor, subject to the preferences applicable to any outstanding preferred stock.

No Preemptive, Redemption or Conversion Rights

The Common Stock is not redeemable, is not subject to sinking fund provisions, does not have any conversion rights and is not subject to call. Holders of shares of Common Stock have no preemptive rights to maintain their percentage of ownership in future offerings or sales of stock of Lumen.

Voting Rights

Under the Articles, each share of Common Stock entitles the holder thereof to one vote per share in all elections of directors and on all other matters duly submitted to shareholders for their vote or consent. Holders of our Common Stock do not have cumulative voting rights.

Liquidation, Dissolution or Similar Rights

In the event we liquidate, dissolve or wind up our affairs, holders of our Common Stock would be entitled to receive ratably all of our assets remaining after satisfying the preferences of our creditors and the holders of any outstanding preferred stock.

Certain Provisions Affecting Takeovers

Provisions of the Articles and Bylaws may delay or discourage transactions involving an actual or potential change of control in the Company or its management, including transactions in which shareholders might otherwise receive a premium for their shares, or transactions that the Company's shareholders might otherwise deem to be in their best interests. Among other things:

- Our Articles provide that shareholder action may only be taken at an annual or special meeting of shareholders and may not be taken by written consent of the shareholders.
- Under our Articles, the shareholders may remove any director or the entire board of directors, only for cause, at any meeting of the shareholders called for such purpose, by the affirmative vote of (i) a majority of the total voting power of all shareholders and (ii) at any time there is a related person (as defined in the Articles), a majority of the total voting power of all shareholders other than the related person, voting as a separate group.
- Pursuant to our Articles, vacancies on our board may be filled only by the board of directors by a vote of both a majority of the directors then in office and a majority of the continuing directors (as defined in the Articles) voting as a separate group.
- Under our Articles, the number of authorized directors may not be increased or decreased without, among other things, the approval of both 80% of the directors then in office and a majority of the continuing directors voting as a separate group.
- Our Articles contain "fair price" provisions designed to provide supermajority vote and other safeguards for our shareholders when related persons attempt to effect a business combination with us, unless the business combination is approved in advance by the directors or satisfies various minimum price, consideration and procedural requirements, in each case as set forth in the Articles.
- Our board of directors is required by our Articles to consider particular factors enumerated therein when evaluating a business combination, tender or exchange offer or a proposal by another person to make a tender or exchange offer.
- Our Bylaws establish an advance notice procedure with regard to the nomination, other than by or at the direction of our board of directors, of candidates for election as directors and with regard to other matters to be brought before a meeting of our shareholders.
- Our Articles and applicable Louisiana law restrict the ability of the shareholders to call special shareholder's meetings.

- Various provisions of our Articles may not be amended except upon the affirmative vote of both 80% of the total voting power of all shareholders and two-thirds of the total voting power of shareholders, other than a related person, present or represented at a shareholders' meeting, voting as a separate group.
- Our Bylaws may be adopted, amended or repealed and new bylaws may be adopted by either a majority of our directors and a majority of our continuing directors, voting as a separate group; or the holders of at least 80% of the total voting power of all shareholders and two-thirds of the total voting power of shareholders, other than a related person, present or duly represented at a shareholders' meeting, voting as a separate group.
- Our board of directors is authorized, without action of the shareholders, to issue (i) additional shares of Common Stock, subject to certain limitations under the New York Stock Exchange listing standards and the Louisiana Business Corporation Act, and (ii) additional shares of preferred stock with rights and preferences designated by the board of directors, which could include terms adversely affecting the rights of holders of the Common Stock.

In addition, certain federal foreign ownership limitations and provisions in our debt instruments could potentially discourage certain change of control transactions.

Additional Information

As of December 31, 2022, Lumen had outstanding 7,018 shares of 5% Cumulative Convertible Series L Preferred Stock that entitles the holders to certain preferential liquidation and other rights and to cast one vote per share, together with holders of the Common Stock, on all matters duly submitted to a vote of shareholders. For additional information on the matters summarized above, see our Registration Statement on Form 8-A/A filed with the U.S. Securities and Exchange Commission (the "SEC") on March 2, 2015. Our Articles and Bylaws are filed as exhibits to our accompanying Annual Report on Form 10-K.

DESCRIPTION OF SERIES CC JUNIOR PARTICIPATING PREFERRED STOCK PURCHASE RIGHTS

General

On February 13, 2019, we entered into a Section 382 Rights Agreement by and between the Company and Computershare, Inc., as rights agent (the "Rights Agent"). On May 9, 2019, the Company and the Rights Agent amended and restated the Section 382 Rights Agreement (as so amended and restated, the "NOL Rights Plan"). On November 20, 2020, the Company and the Rights Agent entered into that certain First Amendment effective as of December 1, 2020 (the "First Amendment") to the Company's NOL Rights Plan.

We adopted the NOL Rights Plan to diminish the risk that we could experience an "ownership change" as defined under Section 382 of the Internal Revenue Code of 1986 (as amended, the "Code"), which could substantially limit our ability to use our net operating loss carryover (collectively, the "NOLs") to reduce anticipated future tax liabilities. The First Amendment, among other things, extended the NOL Rights Plan's expiration date through December 1, 2023 to protect the Company's NOLs.

Pursuant to the NOL Rights Plan, the Company's board of directors declared a dividend of one preferred share purchase right (each, a "Right") for each outstanding share of Common Stock. The dividend was distributed to shareholders of record as of the close of business on February 25, 2019.

On May 22, 2019, Lumen's shareholders ratified the NOL Rights Plan, and on May 19 2021, Lumen's shareholders ratified the first amendment.

The following is a summary description of the Rights and the other material terms and conditions of the NOL Rights Plan, as amended by the First Amendment. This summary is intended to provide a general description only, does not purport to be complete and is qualified in its entirety by reference to, and should be read in conjunction with, the complete text of the NOL Rights Plan and the First Amendment. All capitalized terms used herein but not defined herein shall have the meanings ascribed to such terms in the NOL Rights Plan, as amended by the First Amendment.

Applicability of NOL Rights Plan

Under the NOL Rights Plan, since February 25, 2019, each share of our Common Stock has carried with it one Right until the Distribution Date (as defined below) or the earlier expiration of the Rights, as described below. Shareholders who owned 4.9% or more of the outstanding Common Stock as of the close of business on February 13, 2019, will not trigger the Rights so long as they do not (i) acquire additional shares of Common Stock representing one-half of one percent (0.5%) or more of the shares of Common Stock outstanding at the time of such acquisition or (ii) fall under 4.9% ownership of Common Stock and then re-acquire shares that in the aggregate equal 4.9% or more of the Common Stock. A person will not trigger the Rights solely as a result of any transaction that the board of directors determines, in its sole discretion, is an exempt transaction for purposes of triggering the Rights. To the Company's knowledge, STT Crossing Ltd. was the only holder of 5.0% or more of the Company's outstanding shares of Common Stock on February 13, 2019, for purposes of Section 382 of the Code. The NOL Rights Plan permits STT Crossing Ltd. and its affiliates to acquire additional shares of Common Stock subject to certain conditions and restrictions, and to transfer such shares among themselves.

The Company's board of directors may, in its sole discretion prior to the Distribution Date, exempt any person or group for purposes of the NOL Rights Plan if it determines the acquisition by such person or group will not jeopardize tax benefits or is otherwise in the Company's best interests. Any person that acquires shares of Common Stock in violation of these limitations is known as an "Acquiring Person." Notwithstanding the foregoing, a Person shall not be an "Acquiring Person" if the Independent Directors (as defined in the NOL Rights Plan) determines at any time that a Person who would otherwise be an "Acquiring Person" has become such without intending to become an "Acquiring Person," and such Person divests as promptly as practicable (or within such period of time as the Independent Directors determine is reasonable) a sufficient number of shares of Common Stock of the Company so that such Person would no longer be an "Acquiring Person," as defined pursuant to the NOL Rights Plan.

The Rights

From the record date of February 25, 2019 until the Distribution Date or earlier expiration of the Rights, the Rights will trade with, and be inseparable from, the Common Stock. New Rights will also accompany any new shares of Common Stock that are issued after February 13, 2019, until the Distribution Date or earlier expiration of the Rights.

Exercise Price

Each Right will allow its holder to purchase from the Company one ten-thousandth of a share of Series CC Junior Participating Preferred Stock ("Preferred Share") for \$28, subject to adjustment (the "Exercise Price"), once the Rights become exercisable. This fraction of a Preferred Share will give the shareholder approximately the same dividend, voting and liquidation rights as would one share of Common Stock. Prior to exercise, each Right does not give its holder any dividend, voting or liquidation rights.

Exercisability

The Rights will not be exercisable until 10 business days (as may be extended in the discretion of the Independent Directors) after the public announcement that a person or group has become an Acquiring Person unless the NOL rights Plan is theretofore terminated or the Rights are theretofore redeemed (as described below).

We refer to the date when the Rights become exercisable as the "Distribution Date." Until that date or earlier expiration of the Rights, the Common Stock certificates will also evidence the Rights, and any transfer of shares of Common Stock will constitute a transfer of Rights. After that date, the Rights will separate from the Common Stock and be evidenced by book-entry credits or by Rights certificates that we will mail to all eligible holders of Common Stock. Any Rights held by an Acquiring Person, or any Affiliates or Associates of the Acquiring Person, are void and may not be exercised.

Consequences of a Person or Group Becoming an Acquiring Person

If a person or group becomes an Acquiring Person, all holders of Rights except the Acquiring Person, or any Affiliates or Associates of the Acquiring Person, may, upon payment of the Exercise Price, purchase shares of our Common Stock with a market value of twice the Exercise Price, based on the "current per share market price" of the Common Stock (as defined in the NOL Rights Plan) on the date of the acquisition that resulted in such person or group becoming an Acquiring Person.

Exchange

After a person or group becomes an Acquiring Person, our Independent Directors in their sole discretion may extinguish the Rights by exchanging one share of Common Stock or an equivalent security for each Right, other than Rights held by the Acquiring Person or any Affiliates or Associates of the Acquiring Person.

Preferred Share Provisions

Each one ten-thousandth of a Preferred Share, if issued:

- will not be redeemable;
- will entitle holders to dividends equal to the dividends, if any, paid on one share of Common Stock;
- will entitle holders upon liquidation either to receive \$1.00 per share or an amount equal to the payment made on one share of Common Stock, whichever is greater;

- will vote together with the Common Stock as one class on all matters submitted to a vote of shareholders of the Company and will have the same voting power as one share of Common Stock, except as otherwise provided by law; and
- will entitle holders to a per share payment equal to the payment made on one share of Common Stock, if shares of our Common Stock are exchanged via merger, consolidation, or a similar transaction.

The value of each one ten-thousandth interest in a Preferred Share, upon issuance, is expected to approximate the value of one share of Common Stock.

Expiration

The Rights will expire on the earliest of (i) December 1, 2023, (ii) the time at which the Rights are redeemed, (iii) the time at which the Rights are exchanged, or (iv) the time at which the Company's board of directors makes certain specified determinations that the NOLs are no longer necessary or in the best interests of the Company and its shareholders.

Redemption

Our board of directors may redeem the Rights for \$0.0001 per Right at any time before the Distribution Date. If our board of directors redeems any Rights, it must redeem all of the Rights. Once the Rights are redeemed, the only right of the holders of Rights will be to receive the redemption price of \$0.0001 per Right. The redemption price will be adjusted if we have a stock split or stock dividends of our Common Stock.

Anti-Dilution Provisions

Our board of directors may adjust the Exercise Price, the number of Preferred Shares issuable per Right and the number of outstanding Rights to prevent dilution that may occur from a stock dividend, a stock split or a reclassification of the Preferred Shares or Common Stock.

Amendments

The terms of the NOL Rights Plan may be amended by our board of directors without the consent of the holders of the Rights, including to effect additional extensions of the expiration date of the Rights in the future. After any Distribution Date, our board of directors may not amend the agreement in a way that adversely affects holders of the Rights (other than an Acquiring Person, or an Affiliate or Associate of an Acquiring Person).

Additional Information

For additional information on the NOL Rights Plan, see our Registration Statement on Form 8-A filed with the SEC on March 11, 2019, as amended by the Form 8-A/A filed with the SEC on November 27, 2020. The NOL Rights Plan and the First Amendment are filed as exhibits to our accompanying Annual Report on Form 10-K.

**RESTRICTED STOCK AGREEMENT UNDER THE
LUMEN 2018 EQUITY INCENTIVE PLAN
(Time-Based RSA Grant to CEO)**

This RESTRICTED STOCK AGREEMENT (this “Agreement”) is entered into as of _____, 20__ by and between Lumen Technologies, Inc. (“Lumen”) and Kate Johnson (“Award Recipient”).

WHEREAS, Lumen maintains the Lumen 2018 Equity Incentive Plan (the “Plan”), under which the Human Resources and Compensation Committee, or a duly-authorized subcommittee thereof, (the “Committee”) of the Board of Directors of Lumen (the “Board”) may, among other things, directly or indirectly grant restricted shares of Lumen’s common stock, \$1.00 par value per share (the “Common Stock”), to key employees, directors and other service providers of Lumen or its subsidiaries (collectively, the “Company”), subject to such terms, conditions, or restrictions as it may deem appropriate; and

WHEREAS, the Committee has awarded to the Award Recipient restricted shares of Common Stock on the terms and conditions specified below.

NOW, THEREFORE, the parties agree as follows:

1.
AWARD OF SHARES

Upon the terms and conditions of the Plan and this Agreement, Lumen as of the date of this Agreement (the “Grant Date”) hereby awards to the Award Recipient a total of **TOTAL SHARES GRANTED** restricted shares of Common Stock (the “Restricted Stock”) that vest, subject to Sections 2, 3, and 4 hereof, in installments as follows:

Scheduled Vesting Date

Number of Shares of Restricted Stock

SHARES_PERIOD_1

SHARES_PERIOD_2

SHARES_PERIOD_3

2.
AWARD RESTRICTIONS ON
RESTRICTED STOCK

1.1 In addition to the conditions and restrictions provided in the Plan, neither the shares of Restricted Stock nor the right to vote the Restricted Stock, to receive accrued dividends thereon or to enjoy any other rights or interests thereunder or hereunder may be sold, assigned, donated, transferred, exchanged, pledged, hypothecated, or otherwise encumbered prior to vesting, whether voluntarily or involuntarily. All dividends and other distributions relating to the Restricted Stock will accrue when declared and be paid to the Award Recipient only upon the vesting of the related Restricted Stock. Except as otherwise provided in this Section 2.1, the Award Recipient shall be entitled to all rights of a shareholder of Lumen with respect to the Restricted Stock, including the right to vote the shares.

1.2 Termination of Employment due to Death or Disability. If the shares of Restricted Stock have not already vested or been forfeited under the terms of this Agreement or the Plan, all of the shares of Restricted Stock shall vest and all restrictions set forth in Section 2.1 shall lapse on the date on which the employment of the Award Recipient terminates as a result of (i) death or (ii) disability within the meaning of Section 22(e)(3) of the Internal Revenue Code.

1.3 Termination of Employment due to Qualifying Separation. If the shares of Restricted Stock have not already vested or been forfeited under the terms of this Agreement or the Plan, and the Award Recipient's employment terminates because of a "Qualifying Separation" (as defined in Section 6 of the offer letter entered into between Lumen and the Award Recipient on September 12, 2022, the "Offer Letter"), a pro-rated portion of the unvested shares of Restricted Stock, as calculated in accordance with the formula set forth in Section 6 of the Offer Letter, shall not terminate but shall remain outstanding and vest in full on the Release Effective Date (as defined in Section 2.6) and the remaining unvested Restricted Stock shall automatically terminate and be forfeited as of the Award Recipient's termination of employment. If the Release Condition (as defined in Section 2.6) is not satisfied, then the unvested pro-rated Restricted Stock shall automatically terminate and be forfeited as of the 60th day following termination of employment.

1.4 Termination of Employment Following a Change of Control of Lumen.

(a) If the shares of Restricted Stock have not already vested or been forfeited under the terms of this Agreement or the Plan, and if, within 24 months following a Change of Control of Lumen (as defined in the Plan), the Award Recipient's employment is terminated either (i) by the Company or its Affiliates without Cause (as defined below) or (ii) by the Award Recipient for Good Reason (as defined below), then such unvested shares of Restricted Stock shall not terminate but shall remain outstanding and vest in full on the Release Effective Date (as defined in Section 2.6). If the Release Condition (as defined in Section 2.6) is not satisfied, then all unvested Restricted Stock shall automatically terminate and be forfeited as of the 60th day following termination of employment.

(b) "Cause" following a Change of Control

(i) For purposes of this Section 2.4, "Cause" shall mean the Award Recipient's (A) willful breach of any nondisclosure, noncompetition, nonsolicitation or nondisparagement covenants contained in any agreement between the Company and the Award Recipient; (B) conviction of, or plea of guilty or *nolo contendere* to, a felony or other crime involving dishonesty or moral turpitude; (C) workplace conduct resulting in either the payment of civil monetary penalties or the incurrance of civil non-monetary penalties that will materially restrict or prevent the Award Recipient from discharging his obligations to the Company; (D) habitual intoxication during working hours or habitual abuse of or addiction to a controlled substance; (E) material breach of the Company's insider trading, corporate ethics and compliance policies and programs or any other Board-adopted policies applicable to management conduct; (F) participation in the public reporting of any information contained in any report filed by the Company with the Securities and Exchange Commission that was impacted by the Award Recipient's knowing or intentional fraudulent or illegal conduct; or (G) substantial, willful and repeated failure to perform duties as instructed by or on behalf of the Board in writing.

(i) The Award Recipient's employment shall not be deemed terminated for Cause following a Change of Control unless the Company shall

have delivered to the Award Recipient a termination notice with a copy of a resolution adopted by the affirmative vote of not less than three-quarters of the entire Board at a meeting called partly or wholly for such purpose (after reasonable notice is provided to the Award Recipient and the Award Recipient has had an opportunity, with counsel, to be heard by the Board) finding that the Award Recipient should be terminated for Cause and specifying in reasonable detail the grounds therefor.

(ii) No action or inaction shall be deemed the basis for Cause unless the Award Recipient is terminated therefor prior to the first anniversary of the date on which such action or omission is first reported to the Human Resources office of the Company with authority over the Award Recipient.

(a) For purpose of this Section 2.4, "Good Reason" shall mean a termination of the Award Recipient's employment under the following circumstances: (1) the Award Recipient has delivered a written notice to the Company, objecting to a "Good Reason Event" (as defined below) within 90 days following the initial existence or occurrence of such event, (2) the Company fails to cure such event or condition within 30 days following receipt of the Award Recipient's written notice (the "30-day Cure Period"), and (3) as a result, the Award Recipient terminates her employment no later than 18 months following the expiration of the 30-day Cure Period. A "Good Reason Event" shall mean:

(i) Any failure of the Company or its Affiliates (as defined below) to provide the Award Recipient with a position, authority, duties and responsibilities at least commensurate in all material respects with the most significant of those held, exercised and assigned at any time during the 180-day period immediately preceding the Change of Control. The Award Recipient's position, authority, duties and responsibilities after a Change of Control shall not be considered commensurate in all material respects with the Award Recipient's position, authority, duties and responsibilities prior to a Change of Control unless after the Change of Control the Award Recipient holds an equivalent position with, and exercises substantially equivalent authority, duties and responsibilities on behalf of, either the Company or the Post-Transaction Company;

(ii) The assignment to the Award Recipient of any duties inconsistent in any material respect with the Award Recipient's position (including status, offices, titles and reporting requirements), authority, duties or responsibilities at the time of the Change of Control, or any other action that results in a diminution in any material respect in such position, authority, duties or responsibilities;

(iii) A reduction of the Award Recipient's base salary in effect as of the date of the Change of Control without the Award Recipient's consent, except for across-the-board salary reductions similarly affecting all or substantially all similarly-situated officers of the Company and the Post-Transaction Company;

(iv) The Award Recipient is advised of, manifests an awareness of, or becomes aware of facts that would cause a reasonable person to inquire into any failure in any material respect by the Company or its Affiliates to comply with any of the provisions of this Agreement; or

(v) Any directive requiring the Award Recipient to be based at any office or location more than 50 miles from the location the Award Recipient was based prior to the Change of Control, or requiring the Award Recipient to travel

on business to a substantially greater extent than required immediately prior to the Change of Control.

(b) For purposes of this Section 2.4, “Affiliate” (or variants thereof) shall mean a person that controls, or is controlled by or is under common control with, another specified person, either directly or indirectly.

1.5 Termination of Employment due to Retirement. If the shares of Restricted Stock have not already vested or been forfeited under the terms of this Agreement or the Plan, and the Award Recipient’s employment terminates because of retirement on or after attaining the age of 55 with at least ten years of prior service with the Company, then, provided the Committee has specifically approved such action, the shares of Restricted Stock shall not terminate but shall remain outstanding and shall vest, either in full or in part (as determined by the Committee in its sole discretion), and all restrictions set forth in Section 2.1 with respect to such vested shares shall lapse, on the Release Effective Date (as defined in Section 2.6). If the Release Condition is not satisfied, then all unvested Restricted Stock shall automatically terminate and be forfeited as of the 60th day following termination of employment.

1.6 For purposes of Section 2.3, 2.4 and 2.5, (a) “Release Condition” shall mean the Award Recipient’s execution, delivery to the Company and non-revocation of a mutual liability release agreement in the form and substance determined by the Company (and the expiration of any revocation period contained in such release agreement) within 60 days following the Award Recipient’s termination of employment, and (b) “Release Effective Date” shall mean the 8th day following the Award Recipient’s execution and delivery to Lumen of the release agreement referenced in this Section 2.6, provided the Award Recipient does not revoke the release prior to such date.

3. TERMINATION OF EMPLOYMENT

Notwithstanding anything in this Agreement to the contrary, all unvested Restricted Stock shall automatically terminate and be forfeited if the employment of the Award Recipient terminates for any reason, unless and to the extent otherwise specifically provided in Section 2.

4. FORFEITURE OF AWARD

1.1 If, at any time during the Award Recipient’s employment by the Company or within 18 months after termination of employment, the Award Recipient engages in any activity in competition with any activity of the Company, or inimical, contrary or harmful to the interests of the Company, including but not limited to: (a) conduct relating to the Award Recipient’s employment for which either criminal or civil penalties against the Award Recipient may be sought; (b) conduct or activity that results in termination of the Award Recipient’s employment for cause (as such term is described in the Offer Letter); (c) violation of the Company’s policies, including, without limitation, the Company’s insider trading, ethics and corporate compliance policies and programs; (d) participating in the public reporting of any financial or operating result that was impacted by the participant’s knowing or intentional fraudulent or illegal conduct; (e) directly soliciting or recruiting any employee of the Company who was employed at any time during the Award Recipient’s tenure with the Company; (f) disclosing or misusing any trade secret information or material concerning the Company, except for (i) any disclosures provided in good faith to regulators in response to inquiries or investigations or otherwise made in good faith to any regulator or law enforcement authority; (ii) any disclosure of information that Award Recipient otherwise has a right to disclose as legally-protected conduct, including but not limited to reporting possible violations of local, state, or federal law or regulation to any government

agency or entity, including but not limited to the Equal Employment Opportunity Commission, the Department of Justice, the Securities and Exchange Commission, the U.S. Congress, and any agency Inspector General; (iii) any disclosures that are protected under the whistleblower provisions of law; and (iv) reporting, disclosing or discussing conduct Award Recipient reasonably believes constitutes work-related discrimination, harassment, retaliation, sexual assault or wage-and-hour violations; (g) engaging in, promoting, assisting or otherwise participating in a hostile takeover attempt of the Company or any other transaction or proxy contest that could reasonably be expected to result in a Change of Control not approved by the Board; or (h) making any statement or disclosing any information to any customers, suppliers, lessors, lessees, licensors, licensees, employees, or others with whom the Company engages in business that is defamatory or derogatory with respect to the business, operations, technology, management, or other employees of the Company, or taking any other action that could reasonably be expected to injure the Company in its business relationships with any of the foregoing parties or result in any other detrimental effect on the Company, except for (i) any statements or disclosures provided in good faith to regulators in response to inquiries or investigations or otherwise made in good faith to any regulator or law enforcement authority; (ii) any disclosure of information that Award Recipient otherwise has a right to disclose as legally-protected conduct, including but not limited to reporting possible violations of local, state, or federal law or regulation to any government agency or entity, including but not limited to the Equal Employment Opportunity Commission, the Department of Justice, the Securities and Exchange Commission, the U.S. Congress, and any agency Inspector General; (iii) any disclosures that are protected under the whistleblower provisions of law; and (iv) reporting, disclosing or discussing conduct Award Recipient reasonably believes constitutes work-related discrimination, harassment, retaliation, sexual assault or wage-and-hour violations, then the award of Restricted Stock granted hereunder shall automatically terminate and be forfeited effective on the date on which the Award Recipient engages in such activity and (1) all shares of Common Stock acquired by the Award Recipient pursuant to this Agreement (or other securities into which such shares have been converted or exchanged) shall be returned to the Company or, if no longer held by the Award Recipient, the Award Recipient shall pay to the Company, without interest, all cash, securities or other assets received by the Award Recipient upon the sale or transfer of such stock or securities, and (2) all unvested shares of Restricted Stock shall be forfeited.

1.2 If the Award Recipient owes any amount to the Company under Section 4.1 above, the Award Recipient acknowledges that the Company may, to the fullest extent permitted by applicable law, deduct such amount from any amounts the Company owes the Award Recipient from time to time for any reason (including without limitation amounts owed to the Award Recipient as salary, wages, reimbursements or other compensation, fringe benefits, retirement benefits or vacation pay). Whether or not the Company elects to make any such set-off in whole or in part, if the Company does not recover by means of set-off the full amount the Award Recipient owes it, the Award Recipient hereby agrees to pay immediately the unpaid balance to the Company.

1.3 The Award Recipient may be released from the Award Recipient's obligations under Sections 4.1 and 4.2 above only if the Committee or its delegee determines in its sole discretion that such action is in the best interests of the Company.

5. STOCK CERTIFICATES

No stock certificates evidencing the Restricted Stock shall be issued by Lumen until the lapse of restrictions under the terms hereof. Instead, ownership of the Restricted Stock shall be evidenced by a book entry with the applicable restrictions reflected. Upon the lapse of restrictions on shares of Restricted Stock, Lumen shall issue the vested shares of Restricted Stock

(either through book entry issuances or delivery of a stock certificate) in the name of the Award Recipient or her nominee, subject to the other terms and conditions hereof, including those governing any withholdings of shares under Section 6 below. Upon receipt of any such vested shares, the Award Recipient is free to hold or dispose of such shares, subject to (i) applicable securities laws, (ii) Lumen's policy statement on insider trading, and (iii) any of Lumen's stock ownership guidelines then in effect that are applicable to the Award Recipient.

6.
WITHHOLDING TAXES

Notwithstanding any Plan provision to the contrary, at the time that all or any portion of the Restricted Stock vests, Lumen will withhold from the shares the Award Recipient otherwise would receive hereunder the number of whole shares of Common Stock, rounding up if necessary, having a value equal to the minimum statutory amount required to be withheld under federal, state and local law (or, if permitted by the Committee and elected by the Award Recipient, such other rate as will not cause adverse accounting consequences and is permitted under applicable IRS withholding rules).

7.
ADDITIONAL CONDITIONS

Anything in this Agreement to the contrary notwithstanding, if, at any time prior to the vesting of the Restricted Stock in accordance with Section 1 or 2 hereof, Lumen further determines, in its sole discretion, that the listing, registration or qualification (or any updating of any such document) of the shares of Common Stock issuable pursuant hereto is necessary on any securities exchange or under any federal or state securities or blue sky law, or that the consent or approval of any governmental regulatory body is necessary or desirable as a condition of, or in connection with the issuance of shares of Common Stock pursuant thereto, or the removal of any restrictions imposed on such shares, such shares of Common Stock shall not be issued, in whole or in part, or the restrictions thereon removed, unless such listing, registration, qualification, consent or approval shall have been effected or obtained free of any conditions not acceptable to Lumen. Lumen agrees to use commercially reasonable efforts to issue all shares of Common Stock issuable hereunder on the terms provided herein.

8.
NO CONTRACT OF EMPLOYMENT INTENDED

Nothing in this Agreement shall confer upon the Award Recipient any right to continue in the employment of the Company, or to interfere in any way with the right of the Company to terminate the Award Recipient's employment relationship with the Company at any time.

9.
BINDING EFFECT

Upon being duly executed and delivered by Lumen and the Award Recipient, this Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective heirs, executors, administrators, legal representatives and successors. Without limiting the generality of the foregoing, whenever the term "Award Recipient" is used in any provision of this Agreement under circumstances where the provision appropriately applies to the heirs, executors, administrators or legal representatives to whom this award may be transferred by will or by the laws of descent and distribution, the term "Award Recipient" shall be deemed to include such person or persons.

10.

EFFECT OF PLAN TERMS AND COMMITTEE ACTIONS

1.1 Capitalized terms used but not defined in this Agreement shall have the respective meanings ascribed to them in the Plan.

1.2 This Agreement, the rights of the Award Recipient hereunder and the shares of Restricted Stock granted hereby are subject to (i) all of the terms, conditions, restrictions and other provisions of the Plan, as it may be amended from time to time, as fully as if all such provisions were set forth in their entirety in this Agreement and (ii) such rules and regulations as the Committee may adopt for administration of the Plan. It is expressly understood that the Committee is authorized to administer, construe, and make all determinations necessary or appropriate for the administration of the Plan and this Agreement, all of which shall be binding upon the Award Recipient. If any provision of this Agreement conflicts with a provision of the Plan, the Plan provision shall control.

1.3 The Plan is discretionary and may be amended, cancelled or terminated by the Company at any time, in its discretion. The grant of Restricted Stock in this Agreement does not create any contractual rights other than as set forth in this Agreement, and does not create a right to receive Restricted Stock or any other Incentives in the future. Future Incentives, if any, will be at the sole discretion of the Company.

1.4 The Award Recipient acknowledges receipt from Lumen of a copy of the Plan and a prospectus summarizing the Plan and further acknowledges that the Award Recipient was advised to review such materials prior to entering into this Agreement. The Award Recipient waives the right to claim that the provisions of the Plan are not binding upon the Award Recipient and the Award Recipient's heirs, executors, administrators, legal representatives and successors.

11.

ATTORNEYS' FEES AND EXPENSES

Should any party hereto retain counsel for the purpose of enforcing, or preventing the breach of, any provision hereof, including, but not limited to, the institution of any action or proceeding in court to enforce any provision hereof, to enjoin a breach of any provision of this Agreement, to obtain specific performance of any provision of this Agreement, to obtain monetary or liquidated damages for failure to perform any provision of this Agreement, or for a declaration of such parties' rights or obligations hereunder, or for any other judicial remedy, then the prevailing party shall be entitled to be reimbursed by the losing party for all costs and expenses incurred thereby, including, but not limited to, attorneys' fees (including costs of appeal).

12.

GOVERNING LAW

This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado. The Award Recipient and Lumen shall submit to the exclusive jurisdiction of, and venue in, the courts in Colorado in any dispute relating to this Agreement.

13.

SEVERABILITY

If any term or provision of this Agreement, or the application thereof to any person or circumstance, shall at any time or to any extent be invalid, illegal or unenforceable in any respect

as written, the Award Recipient and Lumen intend for any court construing this Agreement to modify or limit such provision so as to render it valid and enforceable to the fullest extent allowed by law. Any such provision that is not susceptible of such reformation shall be ignored so as to not affect any other term or provision hereof, and the remainder of this Agreement, or the application of such term or provision to persons or circumstances other than those as to which it is held invalid, illegal or unenforceable, shall not be affected thereby and each term and provision of this Agreement shall be valid and enforced to the fullest extent permitted by law.

14. OTHER PROVISIONS

1.1 It is intended that the payments and benefits provided under this Agreement will comply with the requirements of Section 409A of the Code and the regulations promulgated thereunder ("Section 409A") or an exemption therefrom. The Agreement shall be interpreted, construed, administered, and governed in a manner that effects such intent.

1.2 The Plan and this Agreement contain the entire agreement between the parties with respect to the subject matter contained herein. This Agreement may not, without the Award Recipient's consent, be amended or modified so as to materially adversely affect the Award Recipient's rights under this Agreement, except (i) as provided in the Plan, as it may be amended from time to time in the manner provided therein, or (ii) by a written document signed by each of the parties hereto. Any oral or written agreements, representations, warranties, written inducements, or other communications with respect to the subject matter contained herein made prior to the execution of the Agreement shall be void and ineffective for all purposes.

1.3 Nothing expressed or implied in this Agreement is intended or shall be construed to confer upon or give any person, other than the parties hereto and their successors, assigns, heirs, executors, administrators, or legal representatives, any rights or remedies under, or by reason of, this Agreement.

15. ELECTRONIC DELIVERY AND EXECUTION OF DOCUMENTS

1.1 The Company may, in its sole discretion, deliver any documents related to the Award Recipient's current or future participation in the Plan or any other equity compensation plan of the Company by electronic means or request Award Recipient's consent to the terms of an award by electronic means. The plan documents may, but do not necessarily, include: the Plan, any grant notice, this Agreement, the Plan prospectus, and any reports of Lumen provided generally to Lumen's shareholders. In addition, the Award Recipient may deliver by electronic means any grant notice or award agreement to the Company or to such third party involved in administering the applicable plan as the Company may designate from time to time. Such means of electronic delivery may include the delivery of a link to a Company intranet or the Internet site of a third party involved in administering the applicable plan, the delivery of the document via e-mail or such other means of electronic delivery specified by the Company. By accepting the terms of this Agreement, the Award Recipient also hereby consents to participate in such plans and to execute agreements setting the terms of participation through an on-line or electronic system as described herein.

1.2 The Award Recipient acknowledges that the Award Recipient has read Section 15.1 of this Agreement and consents to the electronic delivery and electronic execution of plan documents as described in Section 15.1. The Award Recipient acknowledges that he or she may receive from the Company a paper copy of any documents delivered electronically at no cost to the Award Recipient by contacting the Company by telephone or in writing. The Award Recipient further acknowledges that the Award Recipient will be provided with a paper copy of

any documents if the attempted electronic delivery of such documents to the Award Recipient fails. Similarly, the Award Recipient understands that the Award Recipient must provide the Company or any designated third-party administrator with a paper copy of any documents if the attempted electronic delivery of such documents by the Award Recipient fails. The Award Recipient may revoke her consent to the electronic delivery and execution of documents described in Section 15.1 or may change the electronic mail address to which such documents are to be delivered (if Award Recipient has provided an electronic mail address) at any time by notifying the Company of such revoked consent or revised e-mail address by telephone, postal service or electronic mail. Finally, the Award Recipient understands that he or she is not required to consent to electronic delivery or execution of documents described in Section 15.1.

16.
DATA PRIVACY

As a condition to her participation in the Plan, the Award Recipient consents to the collection, use, and transfer of personal data as described in this paragraph. The Award Recipient understands that the Company holds certain personal information about the Award Recipient, including her name, home address and telephone number, date of birth, social security number or identification number, salary, nationality, job title, any shares of stock or directorships held in the Company, details of all options or any other entitlement to shares of stock awarded, canceled, exercised, vested, unvested, or outstanding in the Award Recipient's favor, for the purpose of managing and administering the Plan ("Data"). The Award Recipient further understands that Lumen or its subsidiaries will transfer Data amongst themselves as necessary for the purpose of implementation, administration, and management of the Award Recipient's participation in the Plan, and that Lumen and any of its subsidiaries may each further transfer Data to any third parties assisting the Company in the implementation, administration, and management of the Plan. The Award Recipient understands that these recipients may be located in the United States or elsewhere, and that the recipients' country may have different data privacy laws and protections than the Award Recipient's country. The Award Recipient authorizes them to receive, possess, use, retain, and transfer the Data, in electronic or other form, for the purposes of implementing, administering, and managing the Award Recipient's participation in the Plan, including any requisite transfer to a broker or other third party with whom the Award Recipient may elect to deposit any amounts received pursuant to the Plan and this Agreement, such Data as may be required for the administration of the Plan. The Award Recipient understands that he or she may, at any time, view Data, require any necessary amendments to it or withdraw the consents herein in writing by contacting her human resources representative. The Award Recipient further understands that this consent is purely voluntary, and will not affect the Award Recipient's employment or career with the Company, although it may affect the Award Recipient's ability to participate in the Plan.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed and delivered on the day and year first above written.

Lumen Technologies, Inc.



By: _____
Stacey W. Goff
Executive Vice President, General Counsel
and Chief Administrative Officer

Kate Johnson
Award Recipient

**RESTRICTED STOCK AGREEMENT UNDER THE
LUMEN 2018 EQUITY INCENTIVE PLAN
(Sign-On Time-Based RSA Grant to CEO)**

This RESTRICTED STOCK AGREEMENT (this “Agreement”) is entered into as of November 7, 2022 by and between Lumen Technologies, Inc. (“Lumen”) and Kate Johnson (“Award Recipient”).

WHEREAS, Lumen maintains the Lumen 2018 Equity Incentive Plan (the “Plan”), under which the Human Resources and Compensation Committee, or a duly-authorized subcommittee thereof, (the “Committee”) of the Board of Directors of Lumen (the “Board”) may, among other things, directly or indirectly grant restricted shares of Lumen’s common stock, \$1.00 par value per share (the “Common Stock”), to key employees, directors and other service providers of Lumen or its subsidiaries (collectively, the “Company”), subject to such terms, conditions, or restrictions as it may deem appropriate; and

WHEREAS, the Committee has awarded to the Award Recipient restricted shares of Common Stock on the terms and conditions specified below.

NOW, THEREFORE, the parties agree as follows:

1.
AWARD OF SHARES

Upon the terms and conditions of the Plan and this Agreement, Lumen as of the date of this Agreement (the “Grant Date”) hereby awards to the Award Recipient a total of **TOTAL SHARES GRANTED** restricted shares of Common Stock (the “Restricted Stock”) that vest, subject to Sections 2, 3, and 4 hereof, on November 7, 2023 (the “Vesting Date”).

2.
AWARD RESTRICTIONS ON
RESTRICTED STOCK

1.1 In addition to the conditions and restrictions provided in the Plan, neither the shares of Restricted Stock nor the right to vote the Restricted Stock, to receive accrued dividends thereon or to enjoy any other rights or interests thereunder or hereunder may be sold, assigned, donated, transferred, exchanged, pledged, hypothecated, or otherwise encumbered prior to vesting, whether voluntarily or involuntarily. All dividends and other distributions relating to the Restricted Stock will accrue when declared and be paid to the Award Recipient only upon the vesting of the related Restricted Stock. Except as otherwise provided in this Section 2.1, the Award Recipient shall be entitled to all rights of a shareholder of Lumen with respect to the Restricted Stock, including the right to vote the shares.

1.2 Termination of Employment due to Death or Disability. If the shares of Restricted Stock have not already vested or been forfeited under the terms of this Agreement or the Plan, all of the shares of Restricted Stock shall vest and all restrictions set forth in Section 2.1 shall lapse on the date on which the employment of the Award Recipient terminates as a result of (i) death or (ii) disability within the meaning of Section 22(e)(3) of the Internal Revenue Code.

1.3 Termination of Employment due to Qualifying Separation. If the shares of Restricted Stock have not already vested or been forfeited under the terms of this Agreement or the Plan, and the Award Recipient’s employment terminates because of a “Qualifying

Separation” (as defined in Section 6 of the offer letter entered into between Lumen and the Award Recipient on September 12, 2022, the “Offer Letter”), a pro-rated portion of the Restricted Stock, as calculated in accordance with the formula set forth in Section 6 of the Offer Letter, shall not terminate but shall remain outstanding and vest in full on the Release Effective Date (as defined in Section 2.5) and the remaining unvested shares of Restricted Stock shall automatically terminate and be forfeited as of the Award Recipient’s termination of employment. If the Release Condition (as defined in Section 2.5) is not satisfied, then the unvested pro-rated Restricted Stock shall automatically terminate and be forfeited as of the 60th day following termination of employment.

1.4 Termination of Employment Following a Change of Control of Lumen:

(a) If the shares of Restricted Stock have not already vested or been forfeited under the terms of this Agreement or the Plan, and if, within 24 months following a Change of Control of Lumen (as defined in the Plan), the Award Recipient’s employment is terminated either (i) by the Company or its Affiliates without Cause (as defined below) or (ii) by the Award Recipient for Good Reason (as defined below), then such unvested shares of Restricted Stock shall not terminate but shall remain outstanding and vest in full on the Release Effective Date (as defined in Section 2.5). If the Release Condition (as defined in Section 2.5) is not satisfied, then all unvested Restricted Stock shall automatically terminate and be forfeited as of the 60th day following termination of employment.

(b) “Cause” following a Change of Control

(i) For purposes of this Section 2.4, “Cause” shall mean the Award Recipient’s (A) willful breach of any nondisclosure, noncompetition, nonsolicitation or nondisparagement covenants contained in any agreement between the Company and the Award Recipient; (B) conviction of, or plea of guilty or *nolo contendere* to, a felony or other crime involving dishonesty or moral turpitude; (C) workplace conduct resulting in either the payment of civil monetary penalties or the incurrance of civil non-monetary penalties that will materially restrict or prevent the Award Recipient from discharging his obligations to the Company; (D) habitual intoxication during working hours or habitual abuse of or addiction to a controlled substance; (E) material breach of the Company’s insider trading, corporate ethics and compliance policies and programs or any other Board-adopted policies applicable to management conduct; (F) participation in the public reporting of any information contained in any report filed by the Company with the Securities and Exchange Commission that was impacted by the Award Recipient’s knowing or intentional fraudulent or illegal conduct; or (G) substantial, willful and repeated failure to perform duties as instructed by or on behalf of the Board in writing.

(i) The Award Recipient’s employment shall not be deemed terminated for Cause following a Change of Control unless the Company shall have delivered to the Award Recipient a termination notice with a copy of a resolution adopted by the affirmative vote of not less than three-quarters of the entire Board at a meeting called partly or wholly for such purpose (after reasonable notice is provided to the Award Recipient and the Award Recipient has had an opportunity, with counsel, to be heard by the Board) finding that the Award Recipient should be terminated for Cause and specifying in reasonable detail the grounds therefor.

(ii) No action or inaction shall be deemed the basis for Cause unless the Award Recipient is terminated therefor prior to the first anniversary of the date on which such action or omission is first reported to the Human Resources office of the Company with authority over the Award Recipient.

(a) For purpose of this Section 2.4, “Good Reason” shall mean a termination of the Award Recipient’s employment under the following circumstances: (1) the Award Recipient has delivered a written notice to the Company, objecting to a “Good Reason Event” (as defined below) within 90 days following the initial existence or occurrence of such event, (2) the Company fails to cure such event or condition within 30 days following receipt of the Award Recipient’s written notice (the “30-day Cure Period”), and (3) as a result, the Award Recipient terminates her employment no later than 18 months following the expiration of the 30-day Cure Period. A “Good Reason Event” shall mean:

(i) Any failure of the Company or its Affiliates (as defined below) to provide the Award Recipient with a position, authority, duties and responsibilities at least commensurate in all material respects with the most significant of those held, exercised and assigned at any time during the 180-day period immediately preceding the Change of Control. The Award Recipient’s position, authority, duties and responsibilities after a Change of Control shall not be considered commensurate in all material respects with the Award Recipient’s position, authority, duties and responsibilities prior to a Change of Control unless after the Change of Control the Award Recipient holds an equivalent position with, and exercises substantially equivalent authority, duties and responsibilities on behalf of, either the Company or the Post-Transaction Company;

(ii) The assignment to the Award Recipient of any duties inconsistent in any material respect with the Award Recipient’s position (including status, offices, titles and reporting requirements), authority, duties or responsibilities at the time of the Change of Control, or any other action that results in a diminution in any material respect in such position, authority, duties or responsibilities;

(iii) A reduction of the Award Recipient’s base salary in effect as of the date of the Change of Control without the Award Recipient’s consent, except for across-the-board salary reductions similarly affecting all or substantially all similarly-situated officers of the Company and the Post-Transaction Company;

(iv) The Award Recipient is advised of, manifests an awareness of, or becomes aware of facts that would cause a reasonable person to inquire into any failure in any material respect by the Company or its Affiliates to comply with any of the provisions of this Agreement; or

(v) Any directive requiring the Award Recipient to be based at any office or location more than 50 miles from the location the Award Recipient was based prior to the Change of Control, or requiring the Award Recipient to travel on business to a substantially greater extent than required immediately prior to the Change of Control.

(b) For purposes of this Section 2.4, “Affiliate” (or variants thereof) shall mean a person that controls, or is controlled by or is under common control with, another specified person, either directly or indirectly.

1.5 For purposes of Section 2.3 and 2.4, (a) “Release Condition” shall mean the Award Recipient’s execution, delivery to the Company and non-revocation of a mutual liability

release agreement in the form and substance determined by the Company (and the expiration of any revocation period contained in such release agreement) within 60 days following the Award Recipient's termination of employment, and (b) "Release Effective Date" shall mean the 8th day following the Award Recipient's execution and delivery to Lumen of the release agreement referenced in this Section 2.5, provided the Award Recipient does not revoke the release prior to such date.

3.
TERMINATION OF EMPLOYMENT

Notwithstanding anything in this Agreement to the contrary, all unvested Restricted Stock shall automatically terminate and be forfeited if the employment of the Award Recipient terminates for any reason, unless and to the extent otherwise specifically provided in Section 2.

4.
FORFEITURE OF AWARD

1.1 If, within 12 months after the Vesting Date, the Award Recipient's employment is terminated by the Company for "Cause," as defined in the Lumen Executive Severance Plan, or by her voluntary resignation, then a pro-rata number of shares of Common Stock acquired by the Award Recipient pursuant to this Agreement (or other securities into which such shares have been converted or exchanged) shall be returned to the Company or, if no longer held by the Award Recipient, the Award Recipient shall pay to the Company, without interest, all cash, securities or other assets received by the Award Recipient upon the sale or transfer of such stock or securities. The pro-rata number of shares due the Company will equal the total number of shares granted pursuant to this Agreement on the Grant Date, reduced by 1/12th of such total number of shares for each full month worked (calculated from the Vesting Date and not a calendar month) after the Vesting Date, until the first anniversary of the Vesting Date (and no clawback will apply for a termination following the first anniversary of the Vesting Date).

1.2 If the Award Recipient owes any amount to the Company under Section 4.1 above, the Award Recipient acknowledges that the Company may, to the fullest extent permitted by applicable law, deduct such amount from any amounts the Company owes the Award Recipient from time to time for any reason (including without limitation amounts owed to the Award Recipient as salary, wages, reimbursements or other compensation, fringe benefits, retirement benefits or vacation pay). Whether or not the Company elects to make any such set-off in whole or in part, if the Company does not recover by means of set-off the full amount the Award Recipient owes it, the Award Recipient hereby agrees to pay immediately the unpaid balance to the Company.

1.3 The Award Recipient may be released from the Award Recipient's obligations under Sections 4.1 and 4.2 above only if the Committee or its delegate determines in its sole discretion that such action is in the best interests of the Company.

5.
STOCK CERTIFICATES

No stock certificates evidencing the Restricted Stock shall be issued by Lumen until the lapse of restrictions under the terms hereof. Instead, ownership of the Restricted Stock shall be evidenced by a book entry with the applicable restrictions reflected. Upon the lapse of restrictions on shares of Restricted Stock, Lumen shall issue the vested shares of Restricted Stock (either through book entry issuances or delivery of a stock certificate) in the name of the Award Recipient or her nominee, subject to the other terms and conditions hereof, including those governing any withholdings of shares under Section 6 below. Upon receipt of any such vested

shares, the Award Recipient is free to hold or dispose of such shares, subject to (i) applicable securities laws, (ii) Lumen's policy statement on insider trading, and (iii) any of Lumen's stock ownership guidelines then in effect that are applicable to the Award Recipient.

6.
WITHHOLDING TAXES

Notwithstanding any Plan provision to the contrary, at the time that all or any portion of the Restricted Stock vests, Lumen will withhold from the shares the Award Recipient otherwise would receive hereunder the number of whole shares of Common Stock, rounding up if necessary, having a value equal to the minimum statutory amount required to be withheld under federal, state and local law (or, if permitted by the Committee and elected by the Award Recipient, such other rate as will not cause adverse accounting consequences and is permitted under applicable IRS withholding rules).

7.
ADDITIONAL CONDITIONS

Anything in this Agreement to the contrary notwithstanding, if, at any time prior to the vesting of the Restricted Stock in accordance with Section 1 or 2 hereof, Lumen further determines, in its sole discretion, that the listing, registration or qualification (or any updating of any such document) of the shares of Common Stock issuable pursuant hereto is necessary on any securities exchange or under any federal or state securities or blue sky law, or that the consent or approval of any governmental regulatory body is necessary or desirable as a condition of, or in connection with the issuance of shares of Common Stock pursuant thereto, or the removal of any restrictions imposed on such shares, such shares of Common Stock shall not be issued, in whole or in part, or the restrictions thereon removed, unless such listing, registration, qualification, consent or approval shall have been effected or obtained free of any conditions not acceptable to Lumen. Lumen agrees to use commercially reasonable efforts to issue all shares of Common Stock issuable hereunder on the terms provided herein.

8.
NO CONTRACT OF EMPLOYMENT INTENDED

Nothing in this Agreement shall confer upon the Award Recipient any right to continue in the employment of the Company, or to interfere in any way with the right of the Company to terminate the Award Recipient's employment relationship with the Company at any time.

9.
BINDING EFFECT

Upon being duly executed and delivered by Lumen and the Award Recipient, this Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective heirs, executors, administrators, legal representatives and successors. Without limiting the generality of the foregoing, whenever the term "Award Recipient" is used in any provision of this Agreement under circumstances where the provision appropriately applies to the heirs, executors, administrators or legal representatives to whom this award may be transferred by will or by the laws of descent and distribution, the term "Award Recipient" shall be deemed to include such person or persons.

10.

EFFECT OF PLAN TERMS AND COMMITTEE ACTIONS

1.1 Capitalized terms used but not defined in this Agreement shall have the respective meanings ascribed to them in the Plan.

1.2 This Agreement, the rights of the Award Recipient hereunder and the shares of Restricted Stock granted hereby are subject to (i) all of the terms, conditions, restrictions and other provisions of the Plan, as it may be amended from time to time, as fully as if all such provisions were set forth in their entirety in this Agreement and (ii) such rules and regulations as the Committee may adopt for administration of the Plan. It is expressly understood that the Committee is authorized to administer, construe, and make all determinations necessary or appropriate for the administration of the Plan and this Agreement, all of which shall be binding upon the Award Recipient. If any provision of this Agreement conflicts with a provision of the Plan, the Plan provision shall control.

1.3 The Plan is discretionary and may be amended, cancelled or terminated by the Company at any time, in its discretion. The grant of Restricted Stock in this Agreement does not create any contractual rights other than as set forth in this Agreement, and does not create a right to receive Restricted Stock or any other Incentives in the future. Future Incentives, if any, will be at the sole discretion of the Company.

1.4 The Award Recipient acknowledges receipt from Lumen of a copy of the Plan and a prospectus summarizing the Plan and further acknowledges that the Award Recipient was advised to review such materials prior to entering into this Agreement. The Award Recipient waives the right to claim that the provisions of the Plan are not binding upon the Award Recipient and the Award Recipient's heirs, executors, administrators, legal representatives and successors.

11.

ATTORNEYS' FEES AND EXPENSES

Should any party hereto retain counsel for the purpose of enforcing, or preventing the breach of, any provision hereof, including, but not limited to, the institution of any action or proceeding in court to enforce any provision hereof, to enjoin a breach of any provision of this Agreement, to obtain specific performance of any provision of this Agreement, to obtain monetary or liquidated damages for failure to perform any provision of this Agreement, or for a declaration of such parties' rights or obligations hereunder, or for any other judicial remedy, then the prevailing party shall be entitled to be reimbursed by the losing party for all costs and expenses incurred thereby, including, but not limited to, attorneys' fees (including costs of appeal).

12.

GOVERNING LAW

This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado. The Award Recipient and Lumen shall submit to the exclusive jurisdiction of, and venue in, the courts in Colorado in any dispute relating to this Agreement.

13.

SEVERABILITY

If any term or provision of this Agreement, or the application thereof to any person or circumstance, shall at any time or to any extent be invalid, illegal or unenforceable in any respect

as written, the Award Recipient and Lumen intend for any court construing this Agreement to modify or limit such provision so as to render it valid and enforceable to the fullest extent allowed by law. Any such provision that is not susceptible of such reformation shall be ignored so as to not affect any other term or provision hereof, and the remainder of this Agreement, or the application of such term or provision to persons or circumstances other than those as to which it is held invalid, illegal or unenforceable, shall not be affected thereby and each term and provision of this Agreement shall be valid and enforced to the fullest extent permitted by law.

14. OTHER PROVISIONS

1.1 It is intended that the payments and benefits provided under this Agreement will comply with the requirements of Section 409A of the Code and the regulations promulgated thereunder ("Section 409A") or an exemption therefrom. The Agreement shall be interpreted, construed, administered, and governed in a manner that effects such intent.

1.2 The Plan and this Agreement contain the entire agreement between the parties with respect to the subject matter contained herein. This Agreement may not, without the Award Recipient's consent, be amended or modified so as to materially adversely affect the Award Recipient's rights under this Agreement, except (i) as provided in the Plan, as it may be amended from time to time in the manner provided therein, or (ii) by a written document signed by each of the parties hereto. Any oral or written agreements, representations, warranties, written inducements, or other communications with respect to the subject matter contained herein made prior to the execution of the Agreement shall be void and ineffective for all purposes.

1.3 Nothing expressed or implied in this Agreement is intended or shall be construed to confer upon or give any person, other than the parties hereto and their successors, assigns, heirs, executors, administrators, or legal representatives, any rights or remedies under, or by reason of, this Agreement.

15. ELECTRONIC DELIVERY AND EXECUTION OF DOCUMENTS

1.1 The Company may, in its sole discretion, deliver any documents related to the Award Recipient's current or future participation in the Plan or any other equity compensation plan of the Company by electronic means or request Award Recipient's consent to the terms of an award by electronic means. The plan documents may, but do not necessarily, include: the Plan, any grant notice, this Agreement, the Plan prospectus, and any reports of Lumen provided generally to Lumen's shareholders. In addition, the Award Recipient may deliver by electronic means any grant notice or award agreement to the Company or to such third party involved in administering the applicable plan as the Company may designate from time to time. Such means of electronic delivery may include the delivery of a link to a Company intranet or the Internet site of a third party involved in administering the applicable plan, the delivery of the document via e-mail or such other means of electronic delivery specified by the Company. By accepting the terms of this Agreement, the Award Recipient also hereby consents to participate in such plans and to execute agreements setting the terms of participation through an on-line or electronic system as described herein.

1.2 The Award Recipient acknowledges that the Award Recipient has read Section 15.1 of this Agreement and consents to the electronic delivery and electronic execution of plan documents as described in Section 15.1. The Award Recipient acknowledges that he or she may receive from the Company a paper copy of any documents delivered electronically at no cost to the Award Recipient by contacting the Company by telephone or in writing. The Award Recipient further acknowledges that the Award Recipient will be provided with a paper copy of

any documents if the attempted electronic delivery of such documents to the Award Recipient fails. Similarly, the Award Recipient understands that the Award Recipient must provide the Company or any designated third-party administrator with a paper copy of any documents if the attempted electronic delivery of such documents by the Award Recipient fails. The Award Recipient may revoke her consent to the electronic delivery and execution of documents described in Section 15.1 or may change the electronic mail address to which such documents are to be delivered (if Award Recipient has provided an electronic mail address) at any time by notifying the Company of such revoked consent or revised e-mail address by telephone, postal service or electronic mail. Finally, the Award Recipient understands that he or she is not required to consent to electronic delivery or execution of documents described in Section 15.1.

16.
DATA PRIVACY

As a condition to her participation in the Plan, the Award Recipient consents to the collection, use, and transfer of personal data as described in this paragraph. The Award Recipient understands that the Company holds certain personal information about the Award Recipient, including her name, home address and telephone number, date of birth, social security number or identification number, salary, nationality, job title, any shares of stock or directorships held in the Company, details of all options or any other entitlement to shares of stock awarded, canceled, exercised, vested, unvested, or outstanding in the Award Recipient's favor, for the purpose of managing and administering the Plan ("Data"). The Award Recipient further understands that Lumen or its subsidiaries will transfer Data amongst themselves as necessary for the purpose of implementation, administration, and management of the Award Recipient's participation in the Plan, and that Lumen and any of its subsidiaries may each further transfer Data to any third parties assisting the Company in the implementation, administration, and management of the Plan. The Award Recipient understands that these recipients may be located in the United States or elsewhere, and that the recipients' country may have different data privacy laws and protections than the Award Recipient's country. The Award Recipient authorizes them to receive, possess, use, retain, and transfer the Data, in electronic or other form, for the purposes of implementing, administering, and managing the Award Recipient's participation in the Plan, including any requisite transfer to a broker or other third party with whom the Award Recipient may elect to deposit any amounts received pursuant to the Plan and this Agreement, such Data as may be required for the administration of the Plan. The Award Recipient understands that he or she may, at any time, view Data, require any necessary amendments to it or withdraw the consents herein in writing by contacting her human resources representative. The Award Recipient further understands that this consent is purely voluntary, and will not affect the Award Recipient's employment or career with the Company, although it may affect the Award Recipient's ability to participate in the Plan.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed and delivered on the day and year first above written.

Lumen Technologies, Inc.



By: _____
Stacey W. Goff
Executive Vice President, General Counsel
and Chief Administrative Officer

_____ Kate Johnson
Award Recipient

Lumen Short-Term Incentive Plan - Annual

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I. Introduction

The Lumen Short-Term Incentive Plan - Annual (the "**Plan**") is designed to motivate employees of Lumen Technologies, Inc. ("**Lumen**") and its eligible subsidiaries (referred to as the "**Company**") by creating the potential for additional compensation for their contributions. The potential short-term incentive ("**STI**") payout is intended to reward individual performance and motivate employees to contribute to the entire Company's success. The Plan is focused on the attainment of goals that are intended to result in the creation of shareholder value and earnings growth over time.

II. Plan Objective

The objectives of the Plan are to:

- Motivate, recognize, and reward Employees (as defined below) who make substantial contributions to the Company's growth and profitability;
- Support executive efforts to achieve higher levels of Company performance;
- Foster cooperation and establish priorities that emphasize returning value to the shareholder;
- Encourage a long-term view with regard to the management of the Company; and
- Retain high performers in the Company.

III. Plan Year

The Plan is based on a fiscal year which aligns with the calendar year. Each calendar year is considered to be a new plan year ("**Plan Year**") for the purpose of the Plan. The decision to offer a plan or STI payout for the Plan Year remains within the full discretion of either (i) the Human Resources & Compensation Committee of the Lumen Board of Directors (the "**Committee**") with respect to STI awards to the Company's Senior Officers (as defined in the Committee's charter), or (ii) the Company's Chief Executive Officer ("**CEO**") or his or her delegates with respect to other participants. The Committee's or the CEO's, as applicable, decision to offer a plan for any particular Plan Year will be announced via a Lumen Short-Term Incentive Plan Overview (the "**Overview**"), published by the Lumen Compensation Department ("**Compensation**") for that Plan Year. Once the Overview is published, it will supplement the terms of this Plan and will be deemed attached hereto and incorporated herein by reference. If no Overview is published by Compensation for a particular Plan Year, this Plan will be neither applicable to nor effective for that Plan Year. Subject to the publication of such Overviews, this Plan is effective for Plan Years beginning on or after January 1, 2017.

IV. Eligibility

a. Plan Participation

Participation and eligibility under the Plan do not guarantee that you will receive any payment under the Plan. Participation in the Plan is limited to certain regular full-time and part-time employees in Eligible Positions who are employed by the Company and are not covered by another short-term incentive plan or agreement (e.g., a sales incentive plan or a monthly STI plan) or are not covered by a written collective bargaining agreement, unless such plan or agreement specifically provides otherwise (collectively "**Employees**"). The lists of Eligible Positions are maintained by Compensation. Typically, Employees may participate in only one short-term incentive or variable compensation plan at any one time, unless their position is designated by Compensation to allow multiple plan participation.

For example, Employees in certain positions are eligible to simultaneously participate in the Short-Term Incentive Plan – Annual and the STI Plan – Monthly/Quarterly. Those Employees will be notified of the "split" in writing – that is, the amount of target STI attributed to the STI Plan – Annual and amount of target STI attributed to the STI Plan – Monthly/Quarterly.

The target percentages under the STI Plan – Annual and the STI Plan – Monthly/Quarterly, when combined, should equal the Employee's annual STI target percentage.

*Annual STI target under the STI Plan – Annual 5%
 Annual STI target under the STI Plan – Monthly/Quarterly + 15%
 Annual STI target 20%*

Individual employee eligibility requires that the Employee:

1. has been hired into or was employed by the Company prior to October 1 of the Plan Year, and
2. has at least three (3) months consecutive service in one or more Eligible Positions during the Plan Year or has experienced a Qualifying Transfer, and
3. is actively employed (“actively employed” excludes employees who are suspended from duty for any legally permissible reason, such as a disciplinary action, or who have provided or received notice of termination of employment) by the Company through the Active Employee STI Payout Date (as defined in the “Timing of Payments/STI Award Payout” section), or has experienced a Qualifying Termination prior to the Active Employee STI Payout Date.

The definitions of “Qualifying Transfer” and “Qualifying Termination,” as well as additional details regarding the same, are outlined in the applicable Country-Specific Addendum. For avoidance of doubt, employees who terminate due to a voluntary resignation are not eligible unless such resignation constitutes a “Qualifying Termination.”

b. Country-Specific Addendum

The Country-Specific Addendum outlines specific eligibility and pro-rating rules applicable to each country in which there are eligible Employees. Capitalized terms used in the Country-Specific Addendum which are not defined in the Country-Specific Addendum but are defined in the Plan shall have the same meaning given to them in the Plan. STI Awards and payouts are subject to the criteria and rules stated in this Plan and the additional criteria and rules stated in the Country-Specific Addendum, as updated or amended from time to time. The Country-Specific Addendum applies only to service rendered while employed in that country.

V. STI Award Calculation

An Employee’s “**STI Award**” is based on three components:

1. STI Target Opportunity
2. the Corporate Performance Factor (“**CPF**”) and
3. the Individual Performance Factor (“**IPF**”).

The following paragraphs explain the three factors and the variables used in the calculation.

a. STI Target Opportunity

The “**STI Target Opportunity**” is the product of an Employee’s STI Eligible Earnings and their STI Target Percent associated with their earnings during the same time period. The STI Target Opportunity is expressed as an amount in local currency.

STI Target Opportunity will be pro-rated to reflect part-time status. In addition, changes in eligibility, salary, eligible earnings, or STI Target Percent during the Plan Year will impact the STI Target Opportunity, as further explained in the Employee’s Country-Specific Addendum.

i. STI Eligible Earnings

STI Eligible Earnings is generally based on annualized salary, as reflected in the Company’s Enterprise Resource Planning System. Country-specific differences are outlined in the Country-Specific Addendum.

ii. STI Target Percent

Employees’ STI Target Percent are set by the Committee or Compensation, as applicable, based upon salary grade, job, tenure and other relevant market factors. Employees can view their STI Target Percent in SuccessFactors under their Profile. Request for corrections to STI Target Percentages should be raised to HR at [HRconnect](#).

iii. Calculating STI Target Opportunity

If an Employee experiences a change in any of the factors used in calculating their STI Target Opportunity, a partial year STI Target Opportunity will be calculated. The partial year STI target opportunity will be pro-rated based on the number of days to which a common set of factors (salary, STI Target Percent, and full-time/part-time status) apply. The partial year STI Target Opportunities are added together to calculate the overall STI Target Opportunity for the year. Please refer to the Country-Specific Addendum for further details and a calculation example.

b. The Corporate Performance Factor

The Corporate Performance Factor (“**CPF**”) is based on financial and qualitative metrics for corporate, business unit and/or country performance defined or approved by the Committee. Information regarding metrics, weightings, target performance and caps for the Company and/or its business units will be outlined in an Overview for that Plan Year. Performance below the minimum performance threshold may result in a CPF of zero, as further explained in the applicable Overview.

For Employees who move from one business unit or country to another, a pro-rated STI Award will be calculated, as applicable, based on the CPF for each business unit or country for the number of days worked in each business unit or country and corresponding STI Target Opportunity.

Once the results are calculated, the Committee or the CEO, as applicable, may adjust, either upward or downward, the CPF for a particular business unit or country based on expense budget management or any other relevant financial or operational matter, consistent with the objectives of this Plan. Any such adjustments will be communicated to impacted Employees.

In the event of a reorganization, at the discretion of the Committee or the CEO, as applicable, metrics may be appropriately restated to reflect the new organization.

c. The Individual Performance Factor

The Individual Performance Factor (“**IPF**”) is (i) based on the Employee’s performance as assessed against his/her objectives as documented in the Company’s Performance Management process, and/or (ii) determined by management based on its discretion, as permitted by applicable law and as further described in the applicable Country-Specific Addendum. Additional detail about the IPF for a particular year will be communicated by Compensation to the business leaders as part of the annual compensation planning process via the STI Matrix. The STI Matrix is a set of guidelines or range of recommended IPFs for each performance rating. The IPF for each Employee is recommended by each Business Unit or supervisor, based on the STI Matrix for a Plan Year. However, based on individual circumstances, any recommendation outside the guidelines must be reviewed and approved by senior leadership. Employees with the same numerical rating may be assigned different IPF percentages, depending on management’s assessment of their individual performance. Employees with deficient performance may be assigned an IPF of zero. The range for the IPF is 0% - 200%.

In order to calculate the final STI Award amount, the three factors (STI Target Opportunity, CPF and IPF) are multiplied together.

$$STI\ Award = STI\ Target\ Opportunity * CPF * IPF$$

The maximum the Employee will receive after both the CPF and IPF is applied is 200% of Target Opportunity. If either CPF or IPF is “zero,” the Employee will not receive an STI payout.

VI. Budgetary Caps

For each business unit or work group with Employees participating in the Plan, a group “budgetary cap” is calculated based on aggregated STI Target Opportunity of all Employees in that group, multiplied by the applicable CPF. The individual group budgets will be aggregated and managed at the Senior Leadership Team (SLT) level or, at the direction of the SLT member, at a lower level within his/her group. The total, aggregated amount of STI payouts to Employees in a group cannot exceed the budgetary cap for that group without the expressed approval of the CEO.

VII. Audit and Approvals of Payouts

Compensation will calculate the CPF and the Internal Audit department will review the financial calculations necessary to determine the CPF. The annual CPF is subject to approval by the Compensation Committee.

Individual STI payouts will be recommended by their manager or supervisor and will follow an agreed-upon process for approval by each Layer 2 leader. Total STI payouts will be approved by the Committee or the CEO, as applicable.

The Committee or the CEO (or his or her designee), as applicable, (i) retains the discretion to adjust payouts due to errors or other adjustments required by or appropriate under this Plan, which will occur before payments are made, and (ii) has the authority to approve adjusted payouts, should errors be identified after audit or approval has occurred.

VIII. Timing of Payments / STI Award Payout

STI Awards are not earned until the relevant STI Payout Date as described below. If an Employee is not “actively employed” on the Active Employee STI Payout Date, the Employee has no right to receive any STI payout amount and the Company has no obligation to pay STI to this Employee (subject to exception only for “Qualifying Terminations” as specifically described in the Country-Specific Addendum).

The “**Active Employee STI Payout Date**” will be a date set for each country selected by the Company in its sole discretion following the end of the Plan Year and after the CPF has been approved by the Compensation Committee. That date will be described or identified in the Country-Specific Addendum.

The Active Employee STI payout will be paid in a lump sum, via check or direct deposit and will be subject to applicable tax and other withholdings, to each Employee who is “actively employed” (as described under the “Eligibility” section) on the selected Active Employee STI Payout Date.

The “**Qualifying Termination STI Payout Date**” will vary based on Qualifying Termination reason as described in the Country-Specific Addendum. The Qualifying Termination STI payout will be made in the manner described in the relevant Country-Specific Addendum and, like other STI payouts, will be subject to applicable tax and other withholdings.

IX. Overpayments and Offsets

Overpayments are defined as any (i) wage advances, (ii) mistaken payment of wages (for example, for time not actually worked), (iii) Paid Time Off, holiday or annual leave advances (use of PTO, holiday or annual leave time before it has been accrued in accordance with local law), (iv) personal or non-business charges on company credit cards, and (v) amounts paid to an Employee that exceed the amounts payable under the Plan. Overpayments can arise from, among other things, adjustments due to errors in results, the failure to follow the terms of the Plan or an error in calculating payments pursuant to the Plan. Employee expressly acknowledges that overpayments represent amounts not earned by the Employee, do not constitute “wages” as defined by applicable law, and are debts owed to the Company, which may be offset or recovered by the Company. In the event that an Employee has been overpaid, Employee specifically authorizes the Company in accordance with applicable law to have overpayments deducted from incentive payments, wages or remuneration due to be paid by the Company in amounts and on a schedule determined by the Company.

In addition, the Company reserves the right to make deductions from any STI payout in accordance with applicable law for any Overpayments or other monies owed to the Company (or other relevant entity) by the Employee or the value of Company property (or property of any other relevant affiliate of the Company) that the Employee has retained in his or her possession without authorization.

X. At-Will Employment

Nothing herein shall affect the employment-at-will relationship, where applicable, between the Company and the Employee. Nothing herein shall grant any Employee the right to continue as an employee of the Company or any affiliated entity or limit the right of the Company or any affiliated entity to dismiss an Employee as an employee.

This Plan is not a contract of employment and does not guarantee continued employment or any specific entitlement. It exists solely to define Lumen policy pertaining to STI.

XI. Source of Payment

The payment of any compensation under this Plan that actually becomes payable shall be made from the Company's general assets. Nothing in this Plan should be construed to create a trust or to establish or evidence any Employee's claim of any right to payment of an STI payout other than as an unsecured general creditor with respect to any payment to which an Employee may be entitled.

XII. Administration

The Committee, with respect to the Senior Officers, and the Executive Vice President of Human Resources with respect to other participants, has the full power and authority to construe, interpret and administer the Plan. The determinations made by the Committee or the Executive Vice President of Human Resources are final, conclusive, and binding on all persons unless such determination is otherwise expressly prohibited by local laws.

XIII. Section 409A of the Internal Revenue Code

It is intended that incentive award payments under the Plan qualify as short-term deferrals exempt from the requirements of Section 409A of the Internal Revenue Code, as amended, and the regulations and guidance promulgated thereunder ("Section 409A"). In the event that any incentive award payment does not qualify for treatment as an exempt short-term deferral, it is intended that such amount will be paid in a manner that satisfies the requirements of Section 409A. The Plan shall be interpreted and construed accordingly.

XIV. Clawback

Notwithstanding any other provisions of this Plan, the Company may cancel any award, require reimbursement of any award by a participant, and effect any other right of recoupment of compensation provided under the Plan in accordance with any Company policies that may be adopted or modified from time to time (including, without limitation, to comply with applicable law or stock exchange listing requirements).

XV. Plan Discretion and Amendments

Any payout under the Plan is a strictly discretionary and conditional payout and is subject to the terms and conditions of the Plan, as amended from time to time. A determination to offer an STI payout for the calendar year resides within the discretion of the Committee or the CEO, as applicable, subject to the Company meeting certain financial metrics as determined by the Committee, with final payout determination dependent upon Committee and CEO approval. Subject to applicable law, the Company reserves the right to alter, amend, suspend, or terminate the Plan at any time, without any liability.

CHANGE OF CONTROL AGREEMENT

CHANGE OF CONTROL AGREEMENT (this “Agreement”), effective as of November 7, 2022 (the “Agreement Date”), between Lumen Technologies, Inc., a Louisiana corporation (the “Company”), and Kate Johnson (the “Employee”).

WITNESSETH:

WHEREAS, pursuant to an offer letter entered into between the Company and the Employee on the Agreement Date (the “Offer Letter”), the Company and the Employee have agreed that the Employee will be provided with certain change of control protections commensurate with her position as President and Chief Executive Officer of the Company;

WHEREAS, the Board of Directors of the Company (the “Board”) has determined that it is in the best interests of the Company and its shareholders to enter into this Agreement with the Employee; and

WHEREAS, the Board believes that this Agreement is reasonably designed to retain the services of the Employee and to assure the full dedication of the Employee, free from personal distraction, in the event of an actual or pending change of control of the Company;

NOW, THEREFORE, the parties agree as follows:

ARTICLE I CERTAIN DEFINITIONS

1.1 **Affiliate.** “Affiliate” (and variants thereof) shall mean a Person that controls, or is controlled by, or is under common control with, another specified Person, either directly or indirectly.

1.2 **Beneficial Owner.** “Beneficial Owner” (and variants thereof), with respect to a security, shall mean a Person who, directly or indirectly (through any contract, understanding, relationship or otherwise), has or shares (i) the power to vote, or direct the voting of, the security, or (ii) the power to dispose of, or direct the disposition of, the security.

1.3 **Business.** “Business” shall mean, as of any particular date, the business of (i) providing local or long distance communication services (including CLEC’s, ILEC’s and international communication services providers with a presence in the United States), network access, Internet access, data, video and IPTV services, web development, hosting, cloud computing, web and managed hosting, content delivery network services, IT services, big data analytics, security; (ii) selling communications products in connection with providing such services or (iii) providing any other material services or selling any other material products then performed or sold by the Company or its Affiliates.

1.4 **Cause.** “Cause” shall mean the Employee’s (i) willful breach of Section 4.1 or 4.2 of this Agreement; (ii) conviction of, or plea of guilty or *nolo contendere* to, a felony or other crime involving dishonesty or moral turpitude; (iii) workplace conduct resulting in the payment of civil monetary penalties or the incurrence of civil non-monetary penalties that will materially restrict or prevent the Employee from discharging her obligations to the Company; (iv) habitual intoxication during working hours or habitual abuse of or addiction to a controlled substance; (v) material breach of the Company’s insider trading, corporate ethics and compliance policies and programs or any other Board-adopted policies applicable to management conduct; (vi) participation in the public reporting of any information contained in any report filed by the Company with the Securities and Exchange Commission that was impacted by the Employee’s

knowing or intentional fraudulent or illegal conduct; or (vii) substantial, willful and repeated failure to perform duties as instructed by or on behalf of the Board in writing.

The Employee's employment shall not be deemed terminated for Cause unless the Company shall have delivered to the Employee a termination notice with a copy of a resolution adopted by the affirmative vote of not less than three-quarters of the entire Board at a meeting called partly or wholly for such purpose (after reasonable notice is provided to the Employee and the Employee has had an opportunity, with counsel, to be heard by the Board) finding that the Employee should be terminated for Cause and specifying in reasonable detail the grounds therefor.

No action or inaction shall be deemed the basis for Cause unless the Employee is terminated therefor prior to the first anniversary of the date on which such action or omission is first known to the Chairman of the Board or the Chair of any standing committee of the Board.

1.5 **Change of Control.** "Change of Control" shall mean:

(a) the acquisition by any Person of Beneficial Ownership of 30% or more of the outstanding shares of the Company's Common Stock, \$1.00 par value per share (the "Common Stock"), or 30% or more of the combined voting power of the Company's then outstanding securities entitled to vote generally in the election of directors; *provided, however*, that for purposes of this subsection (a), the following acquisitions shall not constitute a Change of Control:

(i) any acquisition (other than a Business Combination which constitutes a Change of Control under Section 1.5(c) hereof) of Common Stock directly from the Company,

(ii) any acquisition of Common Stock by the Company or its subsidiaries,

(iii) any acquisition of Common Stock by any employee benefit plan (or related trust) sponsored or maintained by the Company or any corporation controlled by the Company, or

(iv) any acquisition of Common Stock by any entity pursuant to a Business Combination that does not constitute a Change of Control under Section 1.5(c) hereof; or

(b) individuals who, as of the Agreement Date, constitute the Board (the "Incumbent Board") cease for any reason to constitute at least a majority of the Board; *provided, however*, that any individual becoming a director subsequent to the Agreement Date whose election, or nomination for election by the Company's shareholders, was approved by a vote of at least two-thirds of the directors then comprising the Incumbent Board shall be considered a member of the Incumbent Board, unless such individual's initial assumption of office occurs as a result of an actual or threatened election contest with respect to the election or removal of directors or other actual or threatened solicitation of proxies or consents by or on behalf of a Person other than the Incumbent Board; or

(c) consummation of a reorganization, share exchange, merger or consolidation (including any such transaction involving any direct or indirect subsidiary of the Company), or sale or other disposition of all or substantially all of the assets of the Company (a "Business Combination"); *provided, however*, that in no such case shall any such transaction constitute a Change of Control if immediately following such Business Combination,

(i) the individuals and entities who were the Beneficial Owners of the Company's outstanding common stock and the Company's voting securities entitled to vote generally in the election of directors immediately prior to such Business Combination have direct or

indirect Beneficial Ownership, respectively, of more than 50% of the then outstanding shares of common stock, and more than 50% of the combined voting power of the then outstanding voting securities entitled to vote generally in the election of directors, of the Post-Transaction Company (as defined in Section 1.13 hereof), and

(ii) except to the extent that such ownership existed prior to the Business Combination, no Person (excluding the Post-Transaction Company and any employee benefit plan or related trust of the Company, the Post-Transaction Company or any subsidiary of either corporation) Beneficially Owns, directly or indirectly, 20% or more of the then outstanding shares of common stock of the corporation resulting from such Business Combination or 20% or more of the combined voting power of the then outstanding voting securities of such corporation, and

(iii) at least a majority of the members of the board of directors of the Post-Transaction Company were members of the Incumbent Board at the time of the execution of the initial agreement, or of the action of the Board, providing for such Business Combination; or

(d) approval by the shareholders of the Company of a complete liquidation or dissolution of the Company.

1.6 **Code.** “Code” shall mean the Internal Revenue Code of 1986, as amended from time to time.

1.7 **Confidential Information.** “Confidential Information” shall mean any information, knowledge or data of any nature and in any form (including information that is electronically transmitted or stored on any form of magnetic or electronic storage media) that directly or indirectly relates to the past, current or prospective business of the Company and its Affiliates, whether generated by the Company, any of its Affiliates, or any of their respective employees, officers, directors, representatives, consultants, agents or independent contractors, and whether or not marked confidential, including without limitation information relating to operations, products, services, assets, liabilities, franchises, customers, financial condition, results of operations, finances, prospects, strategies, business plans, budgets, projections, pricing information, business acquisitions, joint ventures, processes, research and development ideas, trade secrets, supplier lists, supplier information, distribution and sales data, consultants’ reports, marketing strategies, proprietary computer software, and internal notes and memoranda relating to any of the foregoing; *provided, however*, that “Confidential Information” shall not include any information that (a) is or becomes generally available to the public other than as a result of a breach of this Agreement, or (b) is or becomes available to the Employee on a non-confidential basis from a source other than the Company, its Affiliates or their respective representatives, provided that such source is not known by the Employee to have violated any confidentiality agreement with the Company in connection with such disclosure.

1.8 **Company.** “Company” shall mean Lumen Technologies, Inc. and shall include any successor to or assignee of (whether direct or indirect, by purchase, share exchange, merger, consolidation or otherwise) all or substantially all of the assets or business of the Company that assumes and agrees to perform this Agreement by operation of law or otherwise.

1.9 **Disability.** “Disability” shall mean a condition that would entitle the Employee to receive benefits under the long-term disability insurance policy applicable to the Company’s officers at the time because the Employee is totally disabled or partially disabled, as such terms are defined in the policy then in effect. If the Company has no long-term disability plan in effect, “Disability” shall occur if (a) the Employee is rendered incapable because of physical or mental illness of satisfactorily discharging her duties and responsibilities to the Company for a period of 90 consecutive days, (b) a duly qualified physician chosen by

the Company and acceptable to the Employee or her legal representatives so certifies in writing, and (c) the Board determines that the Employee has become disabled.

1.10 **Employment Term.** “Employment Term” shall mean the period commencing on the date of a Change of Control and ending on the 24-month anniversary of such date.

1.11 **Good Reason.** “Good Reason” shall mean any of the following events or conditions described in this Section 1.11, but only if the Employee shall have provided written notice to the Company within 90 days of the initial existence or occurrence of such event or condition and the Company shall have failed to cure such event or condition within 30 days of its receipt of such notice:

(a) Any failure of the Company or its Affiliates to provide the Employee with a position, authority, duties and responsibilities at least commensurate in all material respects with the most significant of those held, exercised and assigned at any time during the 180-day period immediately preceding the Change of Control. The Employee’s position, authority, duties and responsibilities after a Change of Control shall not be considered commensurate in all material respects with the Employee’s position, authority, duties and responsibilities prior to a Change of Control unless after the Change of Control the Employee holds an equivalent position with, and exercises substantially equivalent authority, duties and responsibilities on behalf of, the Post-Transaction Company;

(b) The assignment to the Employee of any duties inconsistent in any material respect with the Employee’s position (including status, offices, titles and reporting requirements), authority, duties or responsibilities as contemplated by Section 3.1(b) of this Agreement, or any other action that results in a diminution in any material respect in such position, authority, duties or responsibilities;

(c) A reduction of the Employee’s base salary in effect as of the date of the Change of Control without the Employee’s consent, except for across-the-board salary reductions similarly affecting all or substantially all similarly-situated officers of the Company and the Post-Transaction Company;

(d) The Employee is advised of, manifests an awareness of, or becomes aware of facts that would cause a reasonable person to inquire into any failure in any material respect by the Company or its Affiliates to comply with any of the provisions of this Agreement; or

(e) Any directive requiring the Employee to be based at any office or location other than as provided in Section 3.1(b)(ii) hereof or requiring the Employee to travel on business to a substantially greater extent than required immediately prior to the Change of Control.

1.12 **Person.** “Person” shall mean a natural person or entity, and shall also mean the group or syndicate created when two or more Persons act as a syndicate or other group (including, without limitation, a partnership or limited partnership) for the purpose of acquiring, holding, or disposing of a security, except that “Person” shall not include an underwriter temporarily holding a security pursuant to an offering of the security.

1.13 **Post-Transaction Company.** Unless a Change of Control results from a Business Combination (as defined in Section 1.5(c) hereof), “Post-Transaction Company” shall mean the Company after the Change of Control. If a Change of Control results from a Business Combination, “Post-Transaction Company” shall mean the corporation or other entity resulting from the Business Combination unless, as a result of such Business Combination, an ultimate parent entity controls such resulting entity, the Company or all or substantially all of the Company’s assets either directly or indirectly, in which case “Post-Transaction Company” shall mean such ultimate parent entity.

1.14 **Specified Employee.** “Specified Employee” shall mean the Employee if the Employee is a key employee under Treasury Regulations Section 1.409A-1(i) because of final and binding action taken by the Board, its Human Resources and Compensation Committee or such committee’s delegate, or by operation of law or such regulation.

ARTICLE II STATUS OF CHANGE OF CONTROL AGREEMENT

This Agreement provides for severance benefits in the event of a Change of Control of the Company, as defined herein.

ARTICLE III CHANGE OF CONTROL BENEFITS

3.1 Terms of Employment after Change of Control.

(a) This Agreement shall commence on the Agreement Date and continue in effect through December 31, 2022; *provided, however,* that, commencing on January 1, 2023 and each January 1 thereafter, the term of this Agreement shall automatically be extended for one additional year unless, not later than June 30 of the preceding year, the Company or the Employee shall have given written notice that it does not wish to extend this Agreement; *provided, further,* that, notwithstanding any such non-extension notice by the Company, if a Change of Control of the Company shall have occurred during the original or extended term of this Agreement, this Agreement shall continue in effect through the 24-month anniversary of the Change of Control, subject to any earlier termination of the Employee’s status as an employee pursuant to this Agreement; *provided, further,* that in no event shall any termination of this Agreement result in any forfeiture of rights that accrued prior to the date of termination.

(b) During the Employment Term, the Company hereby agrees to continue the Employee in its employ, subject to the terms and conditions of this Agreement. During the Employment Term, (1) the Employee’s position (including status, offices, titles and reporting requirements), authority, duties and responsibilities shall be at least commensurate in all material respects with the most significant of those held, exercised and assigned at any time during the 180-day period immediately preceding the Change of Control and (2) the Employee’s services shall be performed during normal business hours at the location of the Company’s principal executive office at the time of the Change of Control, or the office or location where the Employee was employed immediately preceding the Change of Control or any relocation of any such site to a location that is not more than 50 miles from its location at the time of the Change of Control. The Employee’s position, authority, duties and responsibilities after a Change of Control shall not be considered commensurate in all material respects with the Employee’s position, authority, duties and responsibilities prior to a Change of Control unless after the Change of Control the Employee holds an equivalent position with, and exercises substantially equivalent authority, duties and responsibilities on behalf of, the Post-Transaction Company.

3.2 **Compensation and Benefits.** During the Employment Term, the Employee shall be entitled to the following compensation and benefits:

(a) **Base Salary.** The Employee shall receive an annual base salary (“**Base Salary**”), which shall be paid in at least monthly installments. The Base Salary shall initially be equal to 12 times the highest monthly base salary that was paid or is payable to the Employee, including any base salary which has been earned but deferred by the Employee, by the Company and its Affiliates with respect to any month in the 12-month period ending with the month that immediately precedes the month in which the Change of Control occurs. During the Employment Term, the Employee’s Base Salary shall be reviewed at such time as

the Company undertakes a salary review of her peer employees (but at least annually), and, to the extent that salary increases are granted to her peer employees of the Company (or have been granted during the immediately preceding 12-month period to her peer employees of any Affiliate of the Company), the Employee shall be granted a salary increase commensurate with any increase granted to her peer employees of the Company and its Affiliates. Any increase in Base Salary shall not serve to limit or reduce any other obligation to the Employee under this Agreement. Base Salary shall not be reduced during the Employment Term (whether or not any increase in Base Salary occurs) and, if any increase in Base Salary occurs, the term Base Salary as utilized in this Agreement shall refer to Base Salary as so increased from time to time.

(b) Annual Bonus. In addition to Base Salary, the Employee shall be awarded, for each fiscal year ending during the Employment Term, an annual cash bonus (the "Bonus") in an amount at least equal to the average of the annual bonuses paid to the Employee with respect to the three fiscal years that immediately precede the year in which the Change of Control occurs under the Company's annual bonus plan, or any comparable bonus under a successor plan; *provided, however*, that if the Company has never paid an annual bonus for a full year to the Employee, the Employee shall be awarded a Bonus in an amount at least equal to the target bonus for which the Employee is eligible for the fiscal year in which the Change of Control occurs, assuming achievement at the target level of the objective performance goals established with respect to such bonus and achievement of 100% of any subjective performance goals or criteria otherwise applicable with respect to such bonus. Each such Bonus shall be paid after the end of the fiscal year and no later than the 15th day of the third month of the fiscal year next following the fiscal year for which the Bonus is awarded, unless the Employee shall timely elect to defer the receipt of such Bonus pursuant to any deferred compensation plan sponsored by the Company. For purposes of determining the value of any annual bonuses paid to the Employee in any year preceding the year in which the Change of Control occurs, all cash and stock bonuses earned by the Employee shall be valued as of the date of the grant.

(c) Fringe Benefits. The Employee shall be entitled to fringe benefits commensurate with those provided to her peer employees of the Company and its Affiliates, but in no event shall such fringe benefits be less favorable than the most favorable of those provided by the Company and its Affiliates for the Employee at any time during the one-year period immediately preceding the Change of Control or, if more favorable to the Employee, those provided generally at any time after the Change of Control to her peer employees of the Company and its Affiliates.

(d) Expenses. The Employee shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by the Employee in accordance with the most favorable agreements, policies, practices and procedures of the Company and its Affiliates in effect for the Employee at any time during the one-year period immediately preceding the Change of Control or, if more favorable to the Employee, as in effect generally at any time thereafter with respect to her peer employees of the Company and its Affiliates.

(e) Benefit Plans. (i) The Employee shall be entitled to participate in all incentive, savings and retirement plans, practices, policies and programs applicable generally to her peer employees of the Company and its Affiliates, but in no event shall such plans, practices, policies and programs provide the Employee with incentive opportunities (measured with respect to both regular and special incentive opportunities to the extent that any such distinction is applicable), savings opportunities and retirement benefit opportunities, in each case, less favorable than the most favorable of those provided by the Company and its Affiliates for the Employee under any agreements, plans, practices, policies and programs as in effect at any time during the one-year period immediately preceding the Change of Control or, if more favorable to the Employee, those provided generally at any time after the Change of Control to her peer employees of the Company and its Affiliates.

(i) The Employee and her family shall be eligible for participation in and shall receive all benefits under welfare benefit plans, practices, policies and programs provided by the Company and its Affiliates (including, without limitation, medical, prescription drug, dental, disability, salary continuance, employee life, group life, accidental death and travel accident insurance plans and programs) to the extent applicable generally to her peer employees of the Company and its Affiliates, but in no event shall such plans, practices, policies and programs provide the Employee and her family with benefits, in each case, less favorable than the most favorable of those agreements, plans, practices, policies and programs in effect for the Employee and her family at any time during the one-year period immediately preceding the Change of Control or, if more favorable to the Employee and her family, those provided generally at any time after the Change of Control to her peer employees of the Company and its Affiliates.

(ii) Without limiting the generality of the Company's obligations under this subsection (e), the Company shall comply with all of its obligations under the benefit plans, practices, policies and programs of the Company and its Affiliates that arise in connection with a Change of Control of the Company, including without limitation all obligations that require the Company to (A) fully vest participants under the Company's qualified or non-qualified retirement plans and (B) extend the benefits described in Section 3.5.

(f) Office and Support Staff. The Employee shall be entitled to an office or offices of a size and with furnishings and other appointments, and to secretarial and other assistance, commensurate with those provided to her peer employees of the Company and its Affiliates.

(g) Vacation. The Employee shall be entitled to paid vacation in accordance with the most favorable agreements, plans, policies, programs and practices of the Company and its Affiliates as in effect for the Employee at any time during the one-year period immediately preceding the Change of Control or, if more favorable to the Employee, as in effect generally at any time thereafter with respect to her peer employees of the Company and its Affiliates.

(h) Indemnification. If, in connection with any agreement related to a transaction that will result in a Change of Control of the Company, an undertaking is made to provide the Board with rights to indemnification from the Company (or from any other party to such agreement), the Employee shall, by virtue of this Agreement, be entitled to the same rights to indemnification as are provided to the Board pursuant to such agreement. Otherwise, the Employee shall be entitled to indemnification rights on terms no less favorable to the Employee than those available under any Company indemnification agreements or the articles of incorporation, bylaws or resolutions of the Company at any time after the Change of Control to her peer employees of the Company. Such indemnification rights shall be with respect to all claims, actions, suits or proceedings to which the Employee is or is threatened to be made a party that arise out of or are connected to her services at any time prior to the termination of her employment, without regard to whether such claims, actions, suits or proceedings are made, asserted or arise during or after the Employment Term.

(i) Directors and Officers Insurance. If, in connection with any agreement related to a transaction that will result a Change of Control of the Company, an undertaking is made to provide the Board with continued coverage following the Change of Control under one or more directors and officers liability insurance policies, then the Employee shall, by virtue of this Agreement, be entitled to the same rights to continued coverage under such directors and officers liability insurance policies as are provided to the Board, and the Company shall take any steps necessary to give effect to this provision. Otherwise, the Company shall agree to cover the Employee under any directors and officers liability insurance policies as are provided generally at any time after the Change of Control to her peer employees of the Company.

3.3 Obligations upon Termination after a Change of Control.

(a) Termination by Company for Reasons other than Death, Disability or Cause or by the Employee for Good Reason. If, after a Change of Control and during the Employment Term, the Company or any of its Affiliates terminates the Employee's employment, as defined in Treasury Regulations 1.409A-1(h)(1) ("Separation from Service"), other than for Cause, death or Disability, or the Employee terminates employment for Good Reason, subject to Section 3.3(d) and Section 3.6, if applicable:

(i) the Company shall pay to the Employee in a lump sum in cash within five business days of the date of termination an amount equal to two and one-half (2½) times the sum of (1) the amount of Base Salary in effect pursuant to Section 3.2(a) hereof at the date of termination *plus* (2) the Employee's target annual bonus amount for the fiscal year in which the date of termination occurs; *provided, however*, that, if the Employee has in effect a deferral election with respect to any percentage of the annual bonus which would otherwise become payable with respect to the fiscal year in which termination occurs, such lump sum payment shall be reduced by an amount equal to such percentage times the bonus component of the lump sum payment (which reduction amount shall be deferred in accordance with such election);

(ii) the Company shall pay to the Employee in a lump sum in cash, as promptly as practicable but in no case later than the 15th day of the third month following the end of the fiscal year of the Company in which the termination occurs, a *pro rata* performance bonus, the amount of which shall be determined by multiplying the annual bonus that the Employee would have earned with respect to the entire fiscal year in which the termination occurs, assuming that the Employee had served for the entire fiscal year and calculated by the Company in good faith to exclude the effects of the Change of Control on the applicable performance metrics used to calculate such bonus (including without limitation excluding the effects of any non-recurring transaction costs or any changes in overhead, interest, tax, intercompany or other expenses arising out of such transaction), by the fraction obtained by dividing the number of days in such year through the date of termination by 365; *provided, however*, that, if the Employee has in effect a deferral election with respect to any percentage of the annual bonus which would otherwise become payable with respect to the fiscal year in which termination occurs, such lump sum payment shall be reduced by an amount equal to such percentage times the lump sum payment (which reduction amount shall be deferred in accordance with such election); and, *further provided*, that if the bonus performance period in effect at the date of termination is less than a year, then the foregoing paragraph will apply with respect to such shortened performance period and all references to an annual period or 365 days shall mean the applicable shortened period or shortened number of days to the extent the context requires;

(iii) if, at the date of termination, the Company shall not yet have paid to the Employee (or deferred in accordance with any effective deferral election by the Employee) an annual bonus with respect to a fully completed fiscal year, the Company shall pay to the Employee in a lump sum in cash within five business days of the date of termination but in no case after the 15th day of the third month following the end of the fiscal year of the Company in which the termination occurs, an amount determined as follows: (A) if the Board (acting directly or indirectly through any committee or subcommittee) shall have already determined the amount of such annual bonus, such amount shall be paid, and (B) if the Board shall not have already determined the amount of such annual bonus, the amount to be paid shall be the greater of the amount provided under Section 3.2(b) hereof or the annual bonus that the Employee would have earned with respect to such completed fiscal year, based solely upon the actual level of achievement of the objective performance goals established with respect to such bonus and assuming the achievement of 100% of any subjective performance goals or criteria otherwise applicable with respect to such bonus; *provided, however*,

that, if the Employee has in effect a deferral election with respect to any percentage of the annual bonus which would otherwise become payable with respect to such completed fiscal year, such lump sum payment shall be reduced by an amount equal to such percentage times the lump sum payment (which reduction amount shall be deferred in accordance with such election); *provided, further*, that any payment under this subsection (iii) (or any payment under any other provision of this Agreement calculated by reference to prior or target bonus amounts) shall be payable notwithstanding any provision to the contrary set forth in any bonus plan or program of the Company;

(iv) for a period of two years following the date of termination of employment, or such longer period as may be provided by the terms of the appropriate plan, program, practice or policy (the "Continuation Period"), the Company shall at its expense continue on behalf of the Employee and her dependents and beneficiaries the life insurance, disability, medical, dental and hospitalization benefits (including any benefit under any individual benefit arrangement that covers medical, dental or hospitalization expenses not otherwise covered under any general Company plan) provided (x) to the Employee at any time during the one-year period prior to the Change of Control or at any time thereafter or (y) to other similarly-situated employees who continue in the employ of the Company or its Affiliates during the Continuation Period. If the Employee is a Specified Employee governed by Section 3.3(d), to the extent that any benefits provided to the Employee under this Section 3.3(a)(iv) are taxable to the Employee, then, with the exception of medical insurance benefits, the value of the aggregate amount of such taxable benefits provided to the Employee pursuant to this Section 3.3(a)(iv) during the six-month period following the date of termination shall be limited to the amount specified by Section 402(g)(1)(B) of the Code for the year in which the termination occurred. The Employee shall pay the cost of any benefits that exceed the amount specified in the previous sentence during the six-month period following the date of termination, and shall be reimbursed in full by the Company during the seventh month after the date of termination. The coverage and benefits (including deductibles and costs) provided in this Section 3.3(a)(iv) during the Continuation Period shall be no less favorable to the Employee and her dependents and beneficiaries than the most favorable of such coverages and benefits during any of the periods referred to in clauses (x) or (y) above; *provided, however*, in the event of the Disability of the Employee during the Continuation Period, disability benefits shall, to the maximum extent possible, not be paid for the Continuation Period but shall instead commence immediately following the end of the Continuation Period. The Company's obligation hereunder with respect to the foregoing benefits shall be limited to the extent that the Employee obtains any such benefits pursuant to a subsequent employer's benefit plans, in which case the Company may reduce the coverage of any benefits it is required to provide the Employee hereunder as long as the aggregate coverages and benefits of the combined benefit plans is no less favorable to the Employee than the coverages and benefits required to be provided hereunder. At the end of the Continuation Period, the Employee shall have assigned to her, at no cost and with no apportionment of prepaid premiums, any assignable insurance owned by the Company that relates specifically to the Employee unless such assignment is inconsistent with the terms of any split dollar arrangement with the Employee. The Employee will be eligible for coverage under the Consolidated Omnibus Budget Reconciliation Act at the end of the Continuation Period or earlier cessation of the Company's obligation under the foregoing provisions of this Section 3.3(a)(iv) (or, if the Employee shall not be so eligible for any reason, the Company will provide equivalent coverage);

(v) the Company at its cost shall provide to the Employee outplacement assistance by a reputable firm specializing in such services for the period beginning with the termination of employment and ending one year later; and

(vi) the Company shall discharge its obligations under all other applicable sections of this Article III, including Sections 3.4, 3.5, 3.6 and 3.7.

To the extent that the amounts payable under Section 3.3(a)(iv), Section 3.3(a)(v), or Section 3.7 are deemed to be reimbursements and other separation payments under Treasury Regulations Section 1.409A-1(b)(9)(v), they shall not be deemed to provide for the deferral of compensation governed by Section 409A of the Code. If they do constitute deferral of compensation governed by Section 409A of the Code, they shall be deemed to be reimbursements or in-kind benefits governed by Treasury Regulations Section 1.409A-3(i)(1)(iv). If the previous sentence applies, (1) the amount of expenses eligible for reimbursement or in-kind benefits provided during the Employee's taxable year shall not affect the expenses eligible for reimbursement or in-kind benefits in any other taxable year, (2) the reimbursement of an eligible expense must be made on or before the last day of the Employee's taxable year following the taxable year in which the expense was incurred and (3) the right to reimbursement or in-kind benefits shall not be subject to liquidation or exchange for another benefit.

The payments and benefits provided in this Section 3.3(a) and under all of the Company's employee benefit and compensation plans shall be without regard to any plan amendment made after any Change of Control that adversely affects in any manner the computation of payments and benefits due the Employee under such plan or the time or manner of payment of such payments and benefits, excluding plan amendments that the Company is required by law to implement. After a Change of Control no discretionary power of the Board or any committee thereof shall be used in a way (and no ambiguity in any such plan shall be construed in a way) which adversely affects in any manner any right or benefit of the Employee under any such plan.

(b) Death; Disability; Termination for Cause; or Voluntary Termination. If, after a Change of Control and during the Employment Term, the Employee's status as an employee is terminated (1) by reason of the Employee's death or Disability, (1) by the Company for Cause or (2) voluntarily by the Employee other than for Good Reason, this Agreement shall terminate without further obligation to the Employee or the Employee's legal representatives (other than the timely payment or provision of those already accrued to the Employee, imposed by law or imposed pursuant to employee benefit or compensation plans, programs, practices, policies or agreements maintained by the Company or its Affiliates).

(c) Notice of Termination. Any termination by the Company for Cause or by reason of the Employee's Disability, or by the Employee for Good Reason, shall be communicated by a Notice of Termination to the other party given in accordance with Section 5.2 of this Agreement. For purposes of this Agreement, a "Notice of Termination" means a written notice which (1) indicates the specific termination provision in this Agreement relied upon, (2) to the extent applicable, sets forth in reasonable detail the facts and circumstances claimed to provide a basis for termination of the Employee's employment under the provision so indicated and (3) if the effective date of the termination is other than the date of receipt of such notice, specifies the termination date (which date shall be not more than 30 days after the giving of such notice), provided that the effective date for any termination by reason of the Employee's Disability shall be the 30th day after the giving of such notice, unless prior to such 30th day the Employee shall have resumed the full-time performance of her duties. The failure by the Employee or the Company to set forth in the Notice of Termination any fact or circumstance which contributes to a showing of Cause, Disability or Good Reason shall not waive any right of the Employee or the Company, respectively, hereunder or preclude the Employee or the Company, respectively, from asserting such fact or circumstance in enforcing the Employee's or the Company's rights hereunder.

(d) Six-Month Delay for Specified Employees. Notwithstanding any other provision hereof, payments hereunder which constitute deferred compensation under Section 409A of the Code and the Treasury Regulations thereunder and which are not exempt from coverage by Section 409A of the Code and the Treasury Regulations thereunder shall commence, if Employee is then a Specified Employee and

payment is triggered by her Separation from Service, on the first day of the seventh month following the date of the Specified Employee's Separation from Service, or, if earlier, the date of death of the Specified Employee. On the first day of such seventh month or on the first day of the month following the earlier death of the Specified Employee, the Specified Employee or her estate or spouse, as the case may be, shall be paid in a lump sum the amount that the Specified Employee would have been paid hereunder over the preceding six months (or, if earlier, the months preceding the date of death) but for the fact that she was a Specified Employee. Nevertheless, for all other purposes of this Agreement, the payments shall be deemed to have commenced on the date they would have had the Employee not been a Specified Employee, and payment of any remaining benefits shall be made as otherwise scheduled hereunder.

3.4 Accrued Obligations and Other Benefits. It is the intent of this Agreement that upon termination of employment for any reason following a Change of Control the Employee or her legal representatives be entitled to receive promptly, and in addition to any other benefits specifically provided, (a) the Employee's Base Salary through the date of termination to the extent not theretofore paid, (b) any accrued vacation pay, to the extent not theretofore paid, and (c) any other amounts or benefits required to be paid or provided or which the Employee or her legal representatives are entitled to receive under any plan, program, policy, practice or agreement of the Company.

3.5 Stock Options and Other Incentives. The foregoing benefits provided for in this Article III are intended to be in addition to the value or benefit of any stock options, restricted stock, restricted stock units, performance shares or similar awards, the exercisability, vesting or payment of which is accelerated or otherwise enhanced upon a Change of Control pursuant to the terms of any stock option, incentive or other similar plan or agreement heretofore or hereafter adopted by the Company or the Post-Transaction Company.

3.6 Conditional Payment Reductions.

(a) Notwithstanding any other contrary provisions in any plan, program or policy of the Company, if all or any portion of the benefits payable under this Agreement, either alone or together with other payments and benefits that the Employee receives or is entitled to receive from the Company, would constitute a "parachute payment" within the meaning of Section 280G of the Code, the Company shall reduce the Employee's payments and benefits payable under this Agreement to the extent necessary so that no portion thereof shall be subject to the excise tax imposed by Section 4999 of the Code, but only if, by reason of such reduction, the net after-tax benefit shall exceed the net after-tax benefit if such reduction were not made. "Net after-tax benefit" for these purposes shall mean (i) the sum of the total amount payable to Employee under the Agreement, *plus* all other payments and benefits which Employee receives or is then entitled to receive from the Company that, alone or in combination with the payments and benefits payable under the Agreement, would constitute a "parachute payment" within the meaning of Section 280G of the Code (each such benefit hereinafter referred to as an "Additional Parachute Payment"), *less* (ii) the amount of federal income taxes payable with respect to the foregoing calculated at the maximum marginal income tax rate for each year in which the foregoing shall be paid to the Employee (based upon the rate in effect for such year as set forth in the Code at the time of the payment under the Agreement), *less* (iii) the amount of excise taxes imposed with respect to the payments and benefits described in clause (i) above by Section 4999 of the Code. The parachute payments reduced under this section shall be those that the Employee determines provide the Employee the best economic benefit and, to the extent any parachute payments are economically equivalent with each other, each shall be reduced pro rata; *provided, however*, that the Employee may elect to have the non-cash payments and benefits due the Employee reduced or eliminated prior to any reduction of the cash payments due under this Agreement.

(b) All determinations required to be made under this Section 3.6 shall be made by the accounting firm that was the Company's independent auditor prior to the Change of Control or any other

third party mutually acceptable to the Employee and the Company (the “Accounting Firm”). The Accounting Firm shall provide detailed supporting calculations both to the Company and the Employee. All fees and expenses of the Accounting Firm shall be borne solely by the Company. Absent manifest error, any determination by the Accounting Firm shall be binding upon the Company and the Employee.

(c) For purposes of determining whether and the extent to which any payments would constitute a “parachute payment” (i) no portion of any payments or benefits that the Employee shall have waived at such time and in such manner as not to constitute a “payment” within the meaning of Section 280G(b) of the Code shall be taken into account, (ii) no portion of the payments shall be taken into account which, in the opinion of tax counsel (“Tax Counsel”) reasonably acceptable to the Employee and selected by the Accounting Firm, does not constitute a “parachute payment” within the meaning of Section 280G(b)(2) of the Code (including by reason of Section 280G(b)(4)(A) of the Code) and, in calculating the excise tax, no portion of such payments shall be taken into account which, in the opinion of Tax Counsel, constitutes reasonable compensation for services actually rendered, within the meaning of Section 280G(b)(4)(B) of the Code, in excess of the “base amount” (within the meaning set forth in Section 280G(b)(3) of the Code) allocable to such reasonable compensation, and (iii) the value of any non-cash benefit or any deferred payment or benefit included in the payments shall be determined by the Accounting Firm in accordance with the principles of Sections 280G(d)(3) and (4) of the Code.

3.7 Legal Fees. The Company agrees to reimburse the Employee for all legal fees and other expenses which the Employee may reasonably incur as a result of any contest by the Company or the Post-Transaction Company of the validity or enforceability of, or liability under, any provision of this Agreement, but only if, when and to the extent the Employee prevails with respect to such contest.

3.8 Set-Off; Mitigation. After a Change of Control, the obligations of the Company and its Affiliates to make the payments provided for in this Agreement and otherwise to perform its obligations hereunder shall not be affected by any set-off, counterclaim, recoupment, defense or other claim, right or action which the Company or its Affiliates may have against the Employee or others, other than as expressly provided to the contrary in Section 3.3(a)(iv), Section 3.10 or Section 4.3. It is the intent of this Agreement that in no event shall the Employee be obligated to seek other employment or take any other action to mitigate the amounts or benefits payable to the Employee under any of the provisions of this Agreement.

3.9 Certain Pre-Change of Control Terminations. Notwithstanding any other provision of this Agreement, the Employee’s employment shall be deemed to have been terminated following a Change of Control by the Company without Cause (and the Employee shall be entitled to receive all payments and benefits associated therewith) if the Employee’s employment is terminated by the Company or any of its Affiliates without Cause prior to a Change of Control (whether or not a Change of Control actually occurs) and such termination (1) was at the request or direction of a third party who has taken steps designed to effect a Change of Control or otherwise arose in connection with or in anticipation of a Change of Control or (2) occurred after discussions with a third party regarding a possible Change of Control transaction commenced and such discussions produced (whether before or after such termination) either a preliminary or definitive agreement with respect to such a transaction or a public announcement of the pending transaction (whether or not a Change of Control actually occurs).

3.10 Other Severance Plans. If the Employee becomes entitled to receive severance benefits under this Article III, the Company shall not be required to pay the Employee any additional severance payment under any other severance or salary continuation policy, plan, agreement or arrangement maintained by the Company or its Affiliates unless such other policy, plan, agreement or arrangement expressly provides to the contrary.

ARTICLE IV

NONDISCLOSURE, NONCOMPETITION AND NONSOLICITATION

4.1 **Nondisclosure of Confidential Information.** The Employee acknowledges and agrees that in the course of the Employee's employment the Employee has been in a position to have access to and develop Confidential Information, and will continue to be in position to receive and develop Confidential Information during the Employee's tenure as an employee of the Company or any of its Affiliates. As long as the Employee is an employee of the Company or any of its Affiliates, the Employee shall hold in a fiduciary capacity for the benefit of the Company all Confidential Information which the Employee obtained during the Employee's employment (whether prior to or after the Agreement Date) and shall use such Confidential Information solely in the good faith performance of her duties for the Company and its Affiliates. If the employment of the Employee is terminated for any reason, then, commencing with the termination date and continuing until the fifth anniversary of such date, the Employee shall (a) not communicate, divulge or make available to any Person (other than the Company and its Affiliates) any such Confidential Information, except with the prior written consent of the Company or as may be required by law or legal process, and (b) deliver promptly to the Company upon its written request any Confidential Information in her possession, including any duplicates thereof and any notes or other records the Employee has prepared with respect thereto, provided that Employee need not deliver to the Company, and may retain, one copy of any personal diaries, calendars, or personal notes of correspondence. If the provisions of any applicable law or the order of any court would require the Employee to disclose or otherwise make available any Confidential Information to a governmental authority or to any other third party, the Employee shall give the Company, unless it is unlawful to do so, prompt prior written notice of such required disclosure and an opportunity to contest the requirement of such disclosure or apply for a protective order with respect to such Confidential Information by appropriate proceedings.

Notwithstanding the foregoing, and in accordance with 18 U.S.C. § 1833, nothing herein prohibits Employee (1) from disclosing Confidential Information (a) in confidence to a Federal, State, or local government official, either directly or indirectly, or to an attorney, and (b) solely for the purpose of reporting or investigating a suspected violation of law; or (2) from disclosing Confidential Information in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal. Disclosures to attorneys, made under seal, or pursuant to court order are also protected in certain circumstances under 18 U.S.C. § 1833.

4.2 **Non-competition; Non-solicitation; Non-disparagement.**

(a) The Employee agrees that, during the term of this Agreement and for a period following the termination date of two years if the Employee's employment is terminated by the Company or one of its Affiliates for Cause or by the Employee without Good Reason or one year if the Employee's employment is terminated for any other reason, the Employee will not, directly or indirectly, in any capacity whatsoever, either on the Employee's own behalf or on behalf of any other Person with whom the Employee may be employed or otherwise associated:

(i) engage or invest in, own, manage, operate, finance, control, acquire an interest in, be employed by, render services to, act as an agent on behalf of, or otherwise in any way participate in, associate with or allow her skill, knowledge, experience or reputation to be used by (whether as a proprietor, partner, stockholder, member, director, officer, employee, joint venturer, investor, consultant, agent, sales representative, broker or other participant) any Person engaged in or planning to become engaged in the Business within the United States; *provided, however*, that the Employee may own passive investments in not more than 1% of the outstanding securities of any Person engaged in such Business (but without otherwise participating in such similar business) if such securities are registered under Section 12 of the Securities Exchange Act of 1934, as amended;

(ii) contact any customer of the Company or its Affiliates to solicit, divert or entice away the business of such customer, or otherwise disrupt the relationship between such customer and the Company or its Affiliates;

(iii) solicit, induce, influence or attempt to influence any supplier, lessor, lessee, licensor, partner, joint venturer, potential acquiree or any other person who has a business relationship with the Company or its Affiliates, or who on the termination date is engaged in

discussions or negotiations to enter into a business relationship with the Company or its Affiliates, to discontinue, reduce or limit the extent of such relationship with the Company or any of its Affiliates;

(iv) make contact with any employee of the Company or its Affiliates for the purpose of soliciting such employee for hire, whether as an employee, independent contractor, consultant or otherwise, or otherwise disrupting such employee's relationship with the Company or its Affiliates; or

(v) make any statement or disclose any information to any customers, suppliers, lenders, lessors, licensees, other employees of the Company or its Affiliates or others that is defamatory or derogatory with respect to the business, operations, management or other employees of the Company or its Affiliates, or take any other action (excluding making truthful, non-defamatory statements in good faith that do not violate any other provision of this Agreement) that could reasonably be expected to injure the Company in its business relationships with any of the foregoing parties or result in any other detrimental effect on the Company or its Affiliates.

(b) The Employee agrees that: (i) the covenants and agreements set forth in this Article IV are reasonable both in scope of geographical area and duration, (ii) the Company would not have entered into this Agreement but for such covenants of the Employee, (iii) such covenants have been made as a result of arm-length bargaining in order to induce the Company to enter into this Agreement, and (iv) such covenants and agreements are reasonable and necessary for the protection of the Confidential Information, assets, goodwill and business of the Company. Employee further agrees that the phrase "any Person engaged in or planning to become engaged in the Business within the United States," as used in Section 4.2(a)(i) above, shall include AT&T Inc., Cincinnati Bell Inc., Comcast Corporation, Consolidated Communications Holdings Inc., Crown Castle International Corp., Dish Network Corp., EchoStar Corporation, IDT Corp., Liberty Global plc, Mitel Networks Corp., Telephone & Data Systems Inc., TELUS Corp., Viacom, Inc., Viasat, Inc., Zayo Group Holdings, Inc., XO Holdings, Inc., Sprint Nextel Corporation, tw telecom inc., Verizon Communications Inc., Limelight Networks, Inc., Akamai Technologies Inc., Reliance Communications Venture Limited, including in each case their affiliates, successors, and assigns. To the extent permitted by applicable law, the Employee covenants and agrees not to institute, maintain, prosecute or in any way aid in the institution, maintenance or prosecution of any lawsuit, action, claim, arbitration or other proceeding against the Company or any of its Affiliates with respect to the enforceability of the covenants contained in this Article IV.

4.3 Injunctive Relief; Forfeiture of Future Payments and Benefits; Other Remedies. The Employee acknowledges that a breach by the Employee of Sections 4.1 or 4.2 herein would cause immediate and irreparable harm to the Company for which an adequate monetary remedy does not exist; hence, the Employee agrees that, in the event of a breach or threatened breach by the Employee of the provisions of Sections 4.1 or 4.2 herein during or after the effective date of the Employee's termination, the Company shall be entitled to injunctive relief restraining the Employee from such violation without the necessity of proof of actual damage or the posting of any bond, except as required by non-waivable, applicable law. Nothing herein, however, shall be construed as prohibiting the Company from pursuing any other remedy at law or in equity to which the Company may be entitled under applicable law in the event of a breach or threatened breach of this Agreement by the Employee, including without limitation the recovery of damages, costs or expenses, such as reasonable attorneys' fees, incurred by the Company as a result of any such breach or threatened breach. In addition to the foregoing remedies, the Company shall have the right upon the occurrence of any breach of any nondisclosure, noncompetition or nonsolicitation covenant contained in this Article IV, to cancel any unpaid severance payments, salary, bonus, commissions or reimbursements otherwise outstanding at the termination date, including the suspension, reduction or elimination of payments and benefits under Article III. The Employee acknowledges that any such suspension, reduction or elimination of payments would not constitute, and should not be characterized as, liquidated damages.

4.4 Governing Law of this Article IV; Consent to Jurisdiction. Any dispute regarding the reasonableness of the covenants and agreements set forth in this Article IV or the territorial scope or duration thereof or the remedies available to the Company upon any breach of such covenants and agreements, shall be governed by and interpreted in accordance with the laws of the State of Colorado. The parties mutually agree that any such disputes shall be resolved in the United States District Court for the District of Colorado or the state District Court for the 2nd Judicial District, Denver County, Colorado. The parties agree that it is

their mutual intent that the provisions of this Agreement be enforced to the fullest extent permitted under applicable law, whether now or hereafter in effect, and, to the extent permitted by applicable law, the parties waive any provision of applicable law that would render any provision of Article IV invalid or unenforceable.

ARTICLE V MISCELLANEOUS

5.1 Binding Effect; Successors.

(a) This Agreement shall be binding upon and inure to the benefit of the Company and its successors or assigns, but the Company may assign this Agreement only (i) to an Affiliate or (ii) pursuant to a merger or consolidation in which the Company is not the continuing entity, or the sale or liquidation of all or substantially all of the assets of the Company, provided that the assignee or transferee is the successor to all or substantially all of the assets of the Company and such assignee or transferee assumes the liabilities, obligations and duties of the Company under this Agreement, either contractually on the terms specified below or as a matter of law.

(b) This Agreement is personal to the Employee and shall not be assignable by the Employee without the consent of the Company (there being no obligation to give such consent) other than such rights or benefits as are transferred by will or the laws of descent and distribution, which shall inure to the benefit of the Employee's legal representatives.

(c) The Company shall require any successor to or assignee of (whether direct or indirect, by purchase, share exchange, merger, consolidation or otherwise) all or substantially all of the assets or businesses of the Company (1) to assume unconditionally and expressly this Agreement and (2) to agree to perform or to cause to be performed all of the obligations under this Agreement in the same manner and to the same extent as would have been required of the Company had no assignment or succession occurred.

(d) The Company shall also require all entities that control or that after the transaction will control (directly or indirectly) the Company or any such successor or assignee to agree to cause to be performed all of the obligations under this Agreement.

(e) The obligations of the Company and the Employee which by their nature may require either partial or total performance after the expiration of the term of the Agreement shall survive such expiration.

5.2 **Notices.** All notices hereunder must be in writing and shall be deemed to have been given upon receipt of delivery by: (1) hand (against a receipt therefor), (2) certified or registered mail, postage prepaid, return receipt requested, (3) a nationally recognized overnight courier service or (4) telecopy transmission with confirmation of delivery. All such notices must be addressed as follows:

If to the Company, to:

Lumen Technologies, Inc.
100 CenturyLink Drive
Monroe, Louisiana 71203
Attn: General Counsel

If to the Employee, to:

Kate Johnson, President and Chief Executive Officer
c/o Lumen Technologies, Inc.
1025 Eldorado Boulevard
Building 2000
Broomfield, Colorado 80021

or such other address as to which any party hereto may have notified the other in writing.

5.3 Governing Law. This Agreement shall be construed and enforced in accordance with and governed by the internal laws of the State of Colorado without regard to principles of conflict of laws.

5.4 Withholding. The Employee agrees that the Company has the right to withhold, from the amounts payable pursuant to this Agreement, all amounts required to be withheld under applicable income or employment tax laws, or as otherwise stated in documents granting rights that are affected by this Agreement.

5.5 Amendment and Compliance with Law. No provision of this Agreement may be modified or amended except by an instrument in writing signed by both parties. Notwithstanding any other provision of this Agreement, it is the intention of the parties to this Agreement that no payment or entitlement pursuant to this Agreement will give rise to any adverse tax consequences to the Employee under Section 409A of the Code and Treasury Regulations and other interpretive guidance issued thereunder, including those issued after the date hereof (collectively, "Section 409A"). This Agreement and any amendments hereto shall be interpreted and administered to that end and (i) to the maximum extent permitted by law, no effect shall be given to any provision herein, any amendment hereto or any action taken hereunder in a manner that reasonably could be expected to give rise to adverse tax consequences under Section 409A and (i) the parties shall take any corrective action reasonably within their control that are necessary to avoid such adverse tax consequences.

5.6 Severability. If any term or provision of this Agreement, or the application thereof to any person or circumstance, shall at any time or to any extent be invalid, illegal or unenforceable in any respect as written, the Employee and the Company intend for any court construing this Agreement to modify or limit such provision so as to render it valid and enforceable to the fullest extent allowed by law. Any such provision that is not susceptible of such reformation shall be ignored so as to not affect any other term or provision hereof, and the remainder of this Agreement, or the application of such term or provision to persons or circumstances other than those as to which it is held invalid, illegal or unenforceable, shall not be affected thereby and shall be valid and enforced to the fullest extent permitted by law.

5.7 Waiver of Breach. Except as expressly provided herein to the contrary, the failure by any party to enforce any of its rights hereunder shall not be deemed to be a waiver of such rights, unless such waiver is an express written waiver. The waiver by either party of a breach of any provision of this Agreement shall not operate or be construed as a waiver of any subsequent breach thereof.

5.8 Remedies Not Exclusive. No remedy specified herein shall be deemed to be such party's exclusive remedy, and accordingly, in addition to all of the rights and remedies provided for in this Agreement, the parties shall have all other rights and remedies provided to them by applicable law, rule or regulation, including without limitation the right to claim interest with respect to any payment not timely made hereunder.

5.9 Company's Reservation of Rights. The Employee acknowledges and understands that (1) the Employee is employed "at will" by either the Company or one of its Affiliates (the "Employer"), (2) the Employee serves at the pleasure of the board of directors of the Employer, and (3) the Employer has the right at any time to terminate the Employee's status as an employee, or to change or diminish her status during the Employment Term, subject to the rights of the Employee to claim the benefits conferred by this Agreement. Notwithstanding any other provisions of this Agreement to the contrary, this Agreement shall not entitle the Employee or her legal representatives to any severance or other benefits of any kind prior to a Change of Control or to any such benefits if Employee is not employed by the Company or one of its Affiliates on the date of a Change of Control, except in each case for those rights afforded under Section 3.9.

5.10 Non-exclusivity of Rights. Subject to Section 5.9, nothing in this Agreement shall prevent or limit the Employee's continuing or future participation in any plan, program, policy or practice provided by the Company or any of its Affiliates and for which the Employee may qualify, nor shall anything herein limit or otherwise restrict such rights as the Employee may have under any contract or agreement with the Company or any of its Affiliates.

5.11 **Demand for Benefits.** Unless otherwise provided herein, the payment or payments due hereunder shall be paid to the Employee without the need for demand, and to a beneficiary upon the receipt of the beneficiary's address and social security number. In all such cases, the Employee or beneficiary shall provide all required tax withholding information or forms upon the Company's request. Nevertheless, the Employee or a Person claiming to be a beneficiary who claims entitlement to a benefit can file a claim for benefits hereunder with the Company. Unless otherwise provided herein, the Company shall accept or reject the claim within ten business days of its receipt. If the claim is denied, the Company shall give the reason for denial in a written notice that refers to the provision of this Agreement that forms the basis of the denial. If any additional information or material is necessary to perfect the claim, the Company will identify these items in writing and explain why such additional information is necessary.

5.12 **Authority.** The Company represents and warrants that (1) its execution and delivery of this Agreement has been duly authorized by the Board and (2) no other corporate proceedings are necessary to authorize the Company's execution, delivery and performance of this Agreement.

5.13 **Counterparts.** This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument.

5.14 **Interpretation.** Any reference to any section of the Code or the Treasury Regulations shall be deemed to also refer to any successor provisions thereto.

5.15 **The Employee's Acknowledgment.** The Employee represents to the Company that she has read and understands, and agrees to be bound by, each of the terms of this Agreement, including Article IV.

IN WITNESS WHEREOF, the Company and the Employee have caused this Change of Control Agreement to be executed as of the Agreement Date.

LUMEN TECHNOLOGIES, INC.

By: /s/ Stacey W. Goff
Stacey W. Goff
Executive Vice President, General Counsel and Secretary

EMPLOYEE

/s/ Kate Johnson
Kate Johnson
Chief Executive Officer



Exhibit 10.19

December 9, 2022

Shaun Andrews (301028)
EVP Chief Marketing Officer

Dear Shaun,

I am pleased to inform you that the Human Resources and Compensation Committee (the "**Committee**") of the Board of Directors of Lumen Technologies, Inc. (the "**Company**") has approved the following performance-based cash award, subject to the terms and conditions set forth in this letter agreement, in recognition of your unique skills and our desire to secure your continued contributions to the Company.

You have been granted a one-time cash award in the amount of **\$1,000,000** (your "**Award**") that will vest in two equal installments as follows:

- 50% (\$500,000) of your Award shall vest on April 1, 2023, provided that both (1) as of such date the North Star internal restructuring project ("**North Star**") has been publicly announced by the Company, and (2) you are continuously employed by the Company until and on April 1, 2023 (the "**First Vesting Date**"); and
- 50% (\$500,000) of your Award shall vest on December 31, 2023, provided that you are continuously employed by the Company until and on December 31, 2023 (the "**Second Vesting Date**") and together with the First Vesting Date, the "**Vesting Dates**").

The foregoing notwithstanding, if prior to the Second Vesting Date your employment with the Company terminates due to your death or disability (as specified by the Company), then regardless of whether North Star has been announced as of such date, the unvested portion of your Award will be fully vested upon your termination date (with such termination date your "**Termination Vesting Date**").

If the foregoing vesting requirements and other terms and conditions set forth in this letter agreement are met, the vested portion of your Award will be paid to you in a single lump sum (subject to applicable withholding obligations) as soon as administratively practicable after, but in event later than the second regularly scheduled pay period following, the applicable of First Vesting Date or the Second Vesting Date (or, if applicable, your Termination Vesting Date).

If your employment is terminated by the Company for any reason or you voluntarily terminate your employment with the Company, then the unvested portion or your Award will be forfeited as of your termination date. Moreover, if North Star has not been publicly announced by the Company as of the First Vesting Date, then the first installment of your Award will not vest and will be forfeited as of April 1, 2023.


The Award is intended to be exempt from the requirements of Section 409A of the Internal Revenue Code and the accompanying regulations and guidance under the short-term deferral exception.

This letter agreement may not be amended or modified except by a written agreement executed by you and the Company.

This letter agreement is not a contract of employment or an agreement of employment for a definite term. Except where otherwise required under applicable law, your employment remains an employment terminable at will by either party at any time and for any reason or no reason.

We have some challenging, yet exciting, months ahead. We are confident that we can count on you to continue to provide outstanding leadership and results in your area of expertise. I look forward to your continued contributions as we work together. Please reach out to me if you have any questions.

Best Regards,



Scott Trezise
EVP, Human Resources

I ACCEPT AND AGREE TO THE TERMS AND CONDITIONS OF THE AWARD:

Signature: /s/ Shaun Andrews
Shaun Andrews

Date: _____

Please return by emailing executivecompensation@lumen.com. You will receive email confirmation within 48 hours after submission.



Exhibit 10.20

December 9, 2022

Stacey Goff (5284)
EVP General Counsel & Chief Admin Officer

Dear Stacey,

I am pleased to inform you that the Human Resources and Compensation Committee (the "**Committee**") of the Board of Directors of Lumen Technologies, Inc. (the "**Company**") has approved the following performance-based cash award, subject to the terms and conditions set forth in this letter agreement, in recognition of your unique skills and our desire to secure your continued contributions to the Company.

You have been granted a one-time cash award in the amount of **\$1,125,000** (your "**Award**") that will vest in full (100%) on April 1, 2024 (the "**Vesting Date**"), provided that both (1) on or before April 1, 2024, the Company's sale of its business conducted within Europe, the Middle East and Africa to Colt Technology Services Group Limited (referred to as "**Project Merlin**") has been completed or terminated by the Company's Board of Directors (and thus will not be completed) and (2) you remain continuously employed by the Company until and on the Vesting Date. The foregoing notwithstanding, if prior to the Vesting Date (1) your employment with the Company terminates due to your death or disability (as specified by the Company) or (2) the Company terminates your employment without Cause (as defined in the Company's Executive Severance Plan), then regardless of whether Project Merlin has been completed or terminated as of such date, your Award will be fully vested upon your termination date (with such termination date your "**Termination Vesting Date**").

If the foregoing vesting requirements and other terms and conditions set forth in this letter agreement are met, your vested Award will be paid to you in a single lump sum (subject to applicable withholding obligations) as soon as administratively practicable after, but in event later than the second regularly scheduled pay period following, your Vesting Date (or, if applicable, your Termination Vesting Date).

If prior to April 1, 2024 your employment is terminated by the Company for Cause (as defined in the Company's Executive Severance Plan) or you voluntarily terminate your employment with the Company, then your Award will be forfeited as of your termination date. Moreover, if Project Merlin is not completed or terminated by Company's Board of Directors as of the Vesting Date, then your Award will not vest and will be forfeited as of April 1, 2024.

The Award is intended to be exempt from the requirements of Section 409A of the Internal Revenue Code and the accompanying regulations and guidance under the short-term deferral exception.

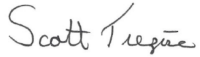
This letter agreement may not be amended or modified except by a written agreement executed by you and the Company.

This letter agreement is not a contract of employment or an agreement of employment for a definite term. Except where otherwise required under applicable law, your employment remains an employment terminable at will by either party at any time and for any reason or no reason.



We have some challenging, yet exciting, months ahead. We are confident that we can count on you to continue to provide outstanding leadership and results in your area of expertise. I look forward to your continued contributions as we work together. Please reach out to me if you have any questions.

Best Regards,



Scott Trezise
EVP, Human Resources

I ACCEPT AND AGREE TO THE TERMS AND CONDITIONS OF THE AWARD:

Signature: /s/ Stacey Goff
Stacey Goff

Date: _____

Please return by emailing executivecompensation@lumen.com. You will receive email confirmation within 48 hours after submission.

Exhibit 21

LUMEN TECHNOLOGIES, INC.
SUBSIDIARIES OF THE REGISTRANT
AS OF December 31, 2022

Subsidiary	State of incorporation or formation
Actel, LLC	Delaware
Century Cellunet International, Inc.	Louisiana
Cellunet of India Limited	Mauritius
Century Telephone of West Virginia, Inc.	West Virginia
Lumen Clarke M. Williams Foundation	Colorado
CenturyLink Communications, LLC	Delaware
Boxgate Holdings, LLC	Delaware
ELASTICBOX INC., SUCURSAL EN ESPAÑA	Spain
Q Fiber, LLC	Delaware
Qwest International Services Corporation	Delaware
Qwest Transoceanic, Inc.	Delaware
Qwest Communications International Ltd.	United Kingdom
CenturyLink Limited	United Kingdom
Qwest Holdings, BV	Netherlands
Qwest Germany GmbH	Germany
Qwest Netherlands BV	Netherlands
Qwest Peru S.R.L.	Peru
SEAL Consulting, Inc.	New Jersey
CenturyLink Europe B.V.	Netherlands
CenturyLink Europe B.V., The Netherlands, filial Sweden	Sweden
CenturyLink Europe B.V., Sucursal en España	Spain
Lumen Technologies Philippines, Inc.	Philippines
Lumen Technology Services Taiwan Limited	Taiwan
Lumen Technologies Hong Kong Limited	Hong Kong
Lumen Technologies Colocation Hong Kong Limited	Hong Kong
Lumen Technologies Services (Shanghai) Co., Ltd.	China
Digital Savvis HK JV Limited	British VI
Digital Savvis HK Holding 1 Limited	British VI
Digital Savvis Investment Management HK Limited	Hong Kong
Digital Savvis Management Subsidiary Limited	Hong Kong
Lumen Technologies Services Malaysia Sdn. Bhd	Malaysia
Lumen Technologies (Thailand) Limited	Thailand
CenturyLink Canada, Inc.	Canada
SAVVIS Communications Chile, S.A.	Chile
SAVVIS Federal Systems, Inc.	Delaware
SAVVIS Communications International, Inc.	Delaware
Lumen Technologies Korea Limited	Korea
SAVVIS Communications Private Limited	India
SAVVIS Mexico, S.A. de C.V.	Mexico
Egnyte, Inc.	Delaware

Subsidiary	State of incorporation or formation
Wam!Net Japan K.K.	Japan
CenturyTel Broadband Wireless, LLC	Louisiana
Qwest Broadband Services, Inc.	Delaware
CenturyTel of Chester, Inc.	Iowa
CenturyTel Holdings, Inc.	Louisiana
Century Marketing Solutions, LLC	Louisiana
CenturyTel Arkansas Holdings, Inc.	Arkansas
CenturyTel Holdings Alabama, Inc.	Alabama
CenturyTel Holdings Missouri, Inc.	Missouri
CenturyTel of the Northwest, Inc.	Washington
Cascade Autovon Company	Washington
CenturyTel/Cable Layers, Inc.	Wisconsin
CenturyTel of Colorado, Inc.	Colorado
CenturyTel of Eagle, Inc.	Colorado
CenturyTel of Eastern Oregon, Inc.	Oregon
CenturyTel Entertainment, Inc.	Washington
CenturyTel of the Gem State, Inc.	Idaho
CenturyTel of Inter Island, Inc.	Washington
CenturyTel of Minnesota, Inc.	Minnesota
CenturyTel of Montana, Inc.	Oregon
CenturyTel of Oregon, Inc.	Oregon
CenturyTel of Paradise, Inc.	Washington
CenturyTel of Cowiche, Inc.	Washington
CenturyTel of Postville, Inc.	Iowa
CenturyTel of the Southwest, Inc.	New Mexico
CenturyTel Telecom Service, Inc.	Washington
CenturyTel Telephone Utilities, Inc.	Washington
CenturyTel of Washington, Inc.	Washington
CenturyTel/WORLDDVOX, Inc.	Oregon
CenturyTel of Wyoming, Inc.	Wyoming
Eagle Valley Communications Corporation	Colorado
Pacific Telecom, Inc. (Shell)	Oregon
Universal Manufacturing Corp.	Wisconsin
CenturyLink Minnesota, Inc.	Minnesota
CenturyLink of Florida, Inc.	Florida
CenturyLink Interactive Holdings LLC	Delaware
CenturyLink Interactive Markets LLC	Delaware
CenturyLink Management Company	Delaware
CenturyLink Network Company, LLC	Delaware
CenturyLink of Nevada, LLC	Delaware
CenturyLink Intellectual Property LLC	Delaware
CenturyLink Sales Solutions, Inc.	Delaware
United Telephone Company of the Northwest	Oregon
United Telephone Company of the West	Delaware

Subsidiary	State of incorporation or formation
CenturyTel of Idaho, Inc.	Delaware
CenturyTel Internet Holdings, Inc.	Louisiana
centurytel.com, LLC	Louisiana
CenturyTel Investments, LLC	Louisiana
CenturyTel Mobile Communications, Inc.	Louisiana
CenturyTel SM Telecorp, Inc.	Texas
CenturyTel Telecommunications, Inc.	Texas
Lumen Technologies Service Group, LLC	Louisiana
CenturyTel Supply Group, Inc.	Louisiana
CenturyTel Web Solutions, LLC	Louisiana
Lafayette MSA Limited Partnership	Delaware
Qwest Communications International, Inc.	Delaware
Qwest Capital Funding, Inc.	Colorado
Qwest Services Corporation	Colorado
CenturyLink Investment Management Company	Colorado
Qwest Corporation	Colorado
RiskSense, Inc.	Delaware
1200 Landmark Center Condominium Association, Inc.	Nebraska
Qwest Database Services, Inc.	Colorado
Qwest India Holdings, LLC	Delaware
Lumen IT India Private Limited	India
Seal Infotech Private Limited	India
The El Paso County Telephone Company	Colorado
Qwest Dex Holdings, Inc.	Delaware
Lumen Technologies Government Solutions, Inc.	Colorado
Qwest Wireless, L.L.C.	Delaware
TelUSA Holdings, LLC	Delaware
Telephone USA of Wisconsin, LLC	Delaware
Western Re, Inc.	Louisiana
Wildcat Holdco LLC	Delaware
Level 3 Parent, LLC	Delaware
Legend Circle Holdings, Inc.	Delaware
Eldorado Acquisition Two, Inc.	Delaware
Level 3 EON, LLC	Delaware
Level 3 Financing, Inc.	Delaware
Streamroot, Inc.	Delaware
Streamroot SAS	France
Level 3 Holdings, Inc.	Delaware
Continental Holdings, Inc.	Wyoming
KMI Continental Lignite, Inc.	Delaware
Continental Level 3, Inc.	Delaware
Continental Mineral Sales, Inc.	Delaware
CCC Canada Holding, Inc.	Delaware
AmSoft Information Services Limited	Mauritius

Subsidiary	State of incorporation or formation
Level 3 International Services, Inc.	Delaware
Lumen Technologies Denmark ApS	Denmark
Lumen Technologies Austria GmbH	Austria
BTE Equipment, LLC	Delaware
Level 3 Communications Canada Co.	Nova Scotia
Level 3 Communications, LLC	Delaware
Level 3 Communications of Virginia, Inc.	Virginia
XCOM Technologies of New York, Inc.	New York
IP Networks, Inc.	Delaware
TelCove Operations, LLC	Delaware
TelCove of Pennsylvania, LLC	Delaware
WiTel Communications (Cayman) Limited	Cayman Islands
WiTel International Telecom (Chile) Limited	Cayman Islands
Williams Comunicaciones Chile Limitada	Chile
WiTel Communications Network, Inc.	Canada
WiTel Communications, LLC	Delaware
WiTel Communications Pty Limited	Australia
Vyvx, LLC	Delaware
FTV Communications, LLC	Delaware
Broadwing, LLC	Delaware
ACME Grating Ventures, L.L.C.	Delaware
Broadwing Communications, LLC	Delaware
Corvis Gratings Company	Nova Scotia, Canada
Corvis Canada Inc.	Quebec, Canada
Camelot Landing, LLC	Delaware
Global Crossing North American Holdings, Inc.	Delaware
Global Crossing North America, Inc.	New York
Global Crossing Telecommunications, Inc.	Michigan
Global Crossing Local Services, Inc.	Michigan
Global Crossing Telemanagement VA, LLC	Virginia
Lumen Technologies Puerto Rico, LLC	Puerto Rico
Lumen Technologies St. Croix, LLC	US Virgin Islands
Level 3 Enhanced Services, LLC	Delaware
Level 3 Telecom, LLC	Delaware
Level 3 Telecom Holdings, LLC	Delaware
Level 3 Telecom Data Services, LLC	Delaware
Level 3 Telecom of Arizona, LLC	Delaware
Level 3 Telecom of Colorado, LLC	Delaware
Level 3 Telecom of Idaho, LLC	Delaware
Level 3 Telecom of Illinois, LLC	Delaware
Level 3 Telecom of Iowa, LLC	Delaware
Level 3 Telecom of Minnesota, LLC	Delaware
Level 3 Telecom of New Mexico, LLC	Delaware
Level 3 Telecom of Ohio, LLC	Delaware

Subsidiary	State of incorporation or formation
Level 3 Telecom of Oregon, LLC	Delaware
Level 3 Telecom of South Carolina, LLC	Delaware
Level 3 Telecom of Tennessee, LLC	Delaware
Level 3 Telecom of Texas, LLC	Delaware
Level 3 Telecom of Utah, LLC	Delaware
Level 3 Telecom of Washington, LLC	Delaware
Level 3 Telecom Management Co., LLC	Delaware
Xspedius Management Co. International, LLC	Delaware
Level 3 Telecom of Alabama, LLC	Delaware
Level 3 Telecom of Arkansas, LLC	Delaware
Level 3 Telecom of DC, LLC	Delaware
Level 3 Telecom of Kansas City, LLC	Delaware
Level 3 Telecom of Kentucky, LLC	Kentucky
Level 3 Telecom of Louisiana, LLC	Delaware
Level 3 Telecom of Maryland, LLC	Delaware
Level 3 Telecom of Mississippi, LLC	Delaware
Level 3 Telecom of Nevada, LLC	Delaware
Level 3 Telecom of Oklahoma, LLC	Delaware
Level 3 Telecom of Virginia, LLC	Virginia
Level 3 Telecom Holdings II, LLC	Delaware
Level 3 Telecom, LP	Delaware
Level 3 Telecom of California, LP	Delaware
Level 3 Telecom of Florida, LP	Delaware
Level 3 Telecom of Georgia, LP	Delaware
Level 3 Telecom of Hawaii, LP	Delaware
Level 3 Telecom of Indiana, LP	Delaware
Level 3 Telecom of New Jersey, LP	Delaware
Level 3 Telecom of New York, LP	Delaware
Level 3 Telecom of North Carolina, LP	Delaware
Level 3 Telecom of Wisconsin, LP	Delaware
Level 3 Asia, Inc.	Delaware
Level 3 Communications (Asia Pacific) Ltd.	Hong Kong
Level 3 International, Inc.	Delaware
Level 3 CDN International, Inc.	Delaware
Lumen Technologies New Zealand Limited	New Zealand
Lumen Technologies APAC Holdings Limited	United Kingdom
Level 3 Communications Australia Pty Ltd	Australia
Level 3 Communications Hong Kong Limited	Hong Kong
Lumen Technologies Asia Pacific Holdings Limited	Hong Kong
Lumen Technologies Australia Pty Ltd	Australia
Lumen Technologies Japan KK	Japan
Qwest Hong Kong Telecommunications, Limited	Hong Kong
Lumen Technologies Singapore Pte. Ltd.	Singapore
Level 3 Communications Singapore Pte. Ltd.	Singapore

Subsidiary	State of incorporation or formation
Qwest Taiwan Telecommunications, Limited	Taiwan
Lumen Technologies EMEA Holdings Limited	United Kingdom
Lumen Technologies Europe Limited	United Kingdom
Lumen East Africa Limited	Kenya
Lumen Technologies UK Limited	United Kingdom
Fibernet UK Limited	United Kingdom
Lumen Communications India Private Limited	India
Level 3 Holdings B.V.	Netherlands
CenturyLink Communications Iceland ehf	Iceland
Lumen Technologies Bulgaria EOOD	Bulgaria
Lumen Technologies Poland SP. Z o.o.	Poland
Lumen Technologies Croatia Usluge d.o.o.	Croatia
CenturyLink Communications Sweden AB	Sweden
Lumen Technologies Norge AS	Norway
Lumen Technologies France S.A.S.	France
Lumen Technologies Hungary Kft	Hungary
Lumen Technologies Italia S.R.L.	Italy
Lumen Technologies Switzerland AG	Switzerland
Lumen Technologies Iberia SA	Spain
CenturyLink Communications España S.A Sucursal em Portugal	Portuguese Branch
Lumen Teknoloji Hizmetleri Limited Şirketi	Turkey
Lumen Technologies Germany GmbH	Germany
Lumen Technologies NL B.V.	Netherlands
Level 3 Communications Japan KK	Japan
Lumen Technologies NL B.V.	Greek Branch
CenturyLink Telekomunikacijske Storitve doo	Slovenia
Lumen Technologies Israel Ltd.	Israel
Level 3 Communications Limited	United Kingdom
Lumen Technologies Finland Oy	Finland
Lumen Technologies Belgium SA	Belgium
Lumen Technologies RS d.o.o. Beograd-Vračar	Serbia
Lumen Technologies EMEA Ireland Limited	Ireland
Lumen Technologies CDN Ireland Limited	Ireland
CenturyLink Communications CZ s.r.o	Czech Republic
Lumen Technologies Luxembourg S.à r.l.	Luxembourg
Lumen Technologies Estonia OÜ	Estonia
Lumen Technologies OOO	Russia
Group Lumen South Africa (PTY) Ltd	South Africa
CenturyLink Communications Slovakia spol. S.r.o.	Slovakia
Level 3 Europe B.V.	Netherlands
Lumen Technologies Romania S.R.L.	Romania
CenturyLink Communications PEC Luxembourg I S.à r.l.	Luxembourg
CenturyLink Communications PEC Luxembourg II S.à r.l.	Luxembourg
CenturyLink Communications PEC Services Europe Limited	Ireland

Subsidiary	State of incorporation or formation
CenturyLink Communications PEC Services Ireland Limited	Ireland
Lumen Technologies PEC Ireland Limited	Ireland
CenturyLink Community Giving Foundation, Inc.	Colorado

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the registration statement (No. 333-227251) on Form S-3, the registration statements (Nos. 333-245036, 333-225154, 333-221267, 333-174571, and 333-150157) on Form S-8, and the registration statement (No. 333-215121) on Form S-4 of our reports dated February 23, 2023, with respect to the consolidated financial statements of Lumen Technologies, Inc. and the effectiveness of internal control over financial reporting.

/s/ KPMG LLP

Denver, Colorado
February 23, 2023

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

I, Kate Johnson, Chief Executive Officer, certify that:

1. I have reviewed this Annual Report on Form 10-K of Lumen Technologies, Inc.;
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 registrant as of, and for, the periods presented in this report;
4. The registrant'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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant 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 registrant, 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) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant'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
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant'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 registrant'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 registrant's internal control over financial reporting.

Date: February 23, 2023

/s/ Kate Johnson

Kate Johnson
Chief Executive Officer

CERTIFICATION OF CHIEF FINANCIAL OFFICER

I, Chris Stansbury, Chief Financial Officer, certify that:

1. I have reviewed this Annual Report on Form 10-K of Lumen Technologies, Inc.;
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 registrant as of, and for, the periods presented in this report;
4. The registrant'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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant 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 registrant, 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) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) evaluated the effectiveness of the registrant'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
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant'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 registrant'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 registrant's internal control over financial reporting.

Date: February 23, 2023

/s/ Chris Stansbury

Chris Stansbury
Executive Vice President and Chief
Financial Officer

**Certification Pursuant to
18 U.S.C. Section 1350,
as Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002**

I, Kate Johnson, Chief Executive Officer of Lumen Technologies, Inc. ("Lumen Technologies"), certify that, to my knowledge, the Annual Report on Form 10-K for the year ended December 31, 2022 of Lumen Technologies fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and that the information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of Lumen Technologies as of the dates and for the periods covered by such report.

A signed original of this statement has been provided to Lumen Technologies and will be retained by Lumen Technologies and furnished to the Securities and Exchange Commission or its staff upon request.

Date: February 23, 2023

/s/ Kate Johnson

Kate Johnson
Chief Executive Officer

**Certification Pursuant to
18 U.S.C. Section 1350,
as Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002**

I, Chris Stansbury, Chief Financial Officer of Lumen Technologies, Inc. ("Lumen Technologies"), certify that, to my knowledge, the Annual Report on Form 10-K for the year ended December 31, 2022 of Lumen Technologies fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and that the information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of Lumen Technologies as of the dates and for the periods covered by such report.

A signed original of this statement has been provided to Lumen Technologies and will be retained by Lumen Technologies and furnished to the Securities and Exchange Commission or its staff upon request.

Date: February 23, 2023

/s/ Chris Stansbury
Chris Stansbury
Executive Vice President and Chief
Financial Officer