UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

(Mark One)

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

FOR THE FISCAL YEAR ENDED DECEMBER 31, 2023

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 Number: 001-33807

EchoStar Corporation

(Exact name of registrant as specified in its charter)

Nevada	**26-1232727**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
9601 South Meridian Boulevard **Englewood, Colorado** (Address of principal executive offices)	**80112** (Zip Code)

Registrant's telephone number, including area code: **(303) 723-1000**

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

Title of each class	**Trading Symbol(s)**	**Name of each exchange on which registered**
Class A common stock, $0.001 par value	SATS	The Nasdaq Stock Market L.L.C.

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 (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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 Act). Yes ☐ No ☒

As of June 30, 2023, the aggregate market value of Class A common stock held by non-affiliates of the registrant was $585.3 million based upon the closing price of the Class A common stock as reported on the Nasdaq Global Select Market as of the close of business on the last trading day of the month.

As of February 20, 2024, the registrant's outstanding common stock consisted of 140,170,052 shares of Class A common stock and 131,348,468 shares of Class B common stock, each $0.001 par value.

DOCUMENTS INCORPORATED BY REFERENCE

The following documents are incorporated into this Form 10-K by reference:

Portions of the registrant's definitive Proxy Statement to be filed in connection with its 2023 Annual Meeting of Shareholders are incorporated by reference in Part III.

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DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

Unless otherwise required by the context, in this report, the words "EchoStar," the "Company," "we," "our" and "us" refer to EchoStar Corporation and its subsidiaries, "DISH Network" refers to DISH Network Corporation, our wholly owned subsidiary, and its subsidiaries, and "DISH DBS" refers to DISH DBS Corporation, a wholly-owned, indirect subsidiary of DISH Network, and its subsidiaries.

This Annual Report on Form 10-K contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including, in particular, statements about our plans, objectives and strategies, growth opportunities in our industries and businesses, our expectations regarding future results, financial condition, liquidity and capital requirements, our estimates regarding the impact of regulatory developments and legal proceedings, and other trends and projections. Forward-looking statements are not historical facts and may be identified by words such as "future," "anticipate," "intend," "plan," "goal," "seek," "believe," "estimate," "expect," "predict," "will," "would," "could," "can," "may," and similar terms. These forward-looking statements are based on information available to us as of the date of this Annual Report on Form 10-K and represent management's current views and assumptions. Forward-looking statements are not guarantees of future performance, events or results and involve known and unknown risks, uncertainties and other factors, which may be beyond our control. Accordingly, actual performance, events or results could differ materially from those expressed or implied in the forward-looking statements due to a number of factors, including, but not limited to, those summarized below:

SUMMARY OF RISK FACTORS

Risks Related to the Integration

- Although we expect that the Merger will result in synergies and other benefits, those synergies and benefits may not be realized in the amounts anticipated, or may not be realized within the expected timeframe, or at all, and risks associated with the foregoing may also result from any extended delay in the Integration.
- The market price for shares of our common stock may be affected by factors different from, or in addition to, those that historically affected the market prices of shares of DISH Network Class A Common Stock and EchoStar Class A Common Stock.

Competition and Economic Risks

- We face intense and increasing competition from providers of video, broadband and/or wireless services. Changing consumer behavior and new technologies in our Pay-TV and/or Wireless business may reduce our subscriber activations and may cause our subscribers to purchase fewer services from us or to cancel our services altogether, resulting in less revenue to us.
- We face certain risks competing in the wireless services industry and operating a facilities-based wireless services business.
- Our pay-TV competitors may be able to leverage their relationships with programmers to reduce their programming costs and/or offer exclusive content that will place them at a competitive advantage to us.
- Through the MNSA and the NSA, we depend on T-Mobile and AT&T to provide network services to our Wireless subscribers. Our failure to effectively manage these relationships, including without limitation, our minimum commitments, any system failure in their wireless networks, interruption in the services provided to us, and/or the termination of the MNSA or the NSA could have a material adverse effect on our business, financial condition and results of operations.
- We compete with the MNOs whose networks we rely on to provide wireless services to our customers, and they may seek to limit, reduce or terminate our network access to the extent that it becomes competitively advantageous to do so.
- If we are unable to take advantage of technological developments on a timely basis, or at all, we may experience a decline in demand for our services or face challenges in implementing or evolving our business strategy.

Operational and Service Delivery Risks

- Any deterioration in our operational performance, subscriber activations and churn rate and subscriber satisfaction could adversely affect our business, financial condition and results of operations.
- We depend on others to provide the programming that we offer to our Pay-TV subscribers and, if we fail to obtain or lose access to certain programming, our Pay-TV subscriber activations and our subscriber churn rate may be negatively impacted.
- We have limited satellite capacity and any failures or reduced capacity, caused by, among other things, operational and environmental risks, could adversely affect our business, financial condition and results of operations.
- Extreme weather may result in risk of damage to our infrastructure and therefore our ability to provide services, and may lead to changes in federal, state and foreign government regulation, all of which could materially and adversely affect our business, results of operations and financial condition.
- We rely on a single vendor or a limited number of vendors to provide certain key products or services to us, and the inability of these key vendors to meet our needs could have a material adverse effect on our business.
- We depend on independent third parties to solicit orders for our services that represent a meaningful percentage of our total gross new subscriber activations.

Risks Related to our Human Capital

- We rely on highly skilled personnel for our business, and any inability to hire and retain key personnel or to hire qualified personnel may negatively affect our business, financial condition and results of operations.
- Our business growth and customer retention strategies rely in part on the work of technically skilled employees.

Risks Related to our Products and Technology

- Our business depends on certain intellectual property rights and on not infringing the intellectual property rights of others.
- We are, and may become, party to various lawsuits which, if adversely decided, could have a significant adverse impact on our business, particularly lawsuits regarding intellectual property.
- If our products contain defects, we could be subject to significant costs to correct such defects and our product and network service contracts could be delayed or cancelled, which could adversely affect our revenue.

Risks Related to Cybersecurity

- We have experienced and may experience in the future consistent cyber-attacks and attempts to gain unauthorized access to our systems and any failure or inadequacy of our information technology infrastructure and communications systems or those of third parties that we use in our operations could disrupt or harm our business.
- The confidentiality, integrity, and availability of our services and products depends on the continuing operation of our information technology and other enabling systems.

Acquisition and Capital Structure Risks

- We have substantial debt outstanding and may incur additional debt and covenants in our Indentures could limit our ability to undertake certain types of activities and adversely affect our liquidity.
- We may pursue acquisitions, dispositions, capital expenditures, the development, acquisition and launch of new satellites and other strategic initiatives to complement or expand our business, which may not be successful and we may lose a portion or all of our investment in these acquisitions and transactions.

- We have made substantial investments to acquire certain wireless spectrum licenses and other related assets, and may be unable to realize a return on these assets.
- We will need additional capital, which may not be available on favorable terms, to fund current obligations, continue investing in our business and to finance acquisitions and other strategic transactions.
- We are controlled by one principal stockholder who is our Chairman.

Risks Related to the Regulation of Our Business

- Our services depend on FCC licenses that can expire or be revoked or modified and applications for FCC licenses that may not be granted.

Other factors that could cause or contribute to such differences include, but are not limited to, those discussed under the caption “Risk Factors” in Part I, Item 1A in this Annual Report on Form 10-K, those discussed in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” herein and those discussed in other documents we file with the SEC. All cautionary statements made or referred to herein should be read as being applicable to all forward-looking statements wherever they appear. Investors should consider the risks and uncertainties described or referred to herein and should not place undue reliance on any forward-looking statements. The forward-looking statements speak only as of the date made, and we expressly disclaim any obligation to update these forward-looking statements.

PART I

Item 1. BUSINESS

OVERVIEW

EchoStar Corporation is a holding company that was organized in October 2007 as a corporation under the laws of the State of Nevada. Its subsidiaries (which together with EchoStar Corporation are referred to as "EchoStar," the "Company," "we," "us" and/or "our," unless otherwise required by the context). Our Class A common stock is publicly traded on the NASDAQ Global Select Market ("NASDAQ") under the symbol "SATS." Our principal executive offices are located at 9601 South Meridian Boulevard, Englewood, Colorado 80112 and our telephone number is (303) 723- 1000.

Recent Developments

Merger with DISH Network

On December 31, 2023, we completed the acquisition of DISH Network pursuant to the Amended and Restated Agreement and Plan of Merger, dated as of October 2, 2023 (the "Amended Merger Agreement"), by and among us, EAV Corp., a Nevada corporation and our wholly owned subsidiary ("Merger Sub"), and DISH Network, pursuant to which we acquired DISH Network by means of the merger of Merger Sub with and into DISH Network (the "Merger"), with DISH Network surviving the Merger as our wholly owned subsidiary.

On the terms and subject to the conditions set forth in the Amended Merger Agreement, on December 31, 2023, at 11:59 p.m. ET (the "Effective Time"), each share of DISH Network Class A common stock, par value $0.01 per share ("DISH Network Class A Common Stock") and DISH Network Class C common stock, par value $0.01 per share ("DISH Network Class C Common Stock") outstanding immediately prior to the Effective Time, was converted into the right to receive a number of validly issued, fully paid and non-assessable shares of EchoStar Class A common stock, par value $0.001 per share ("EchoStar Class A Common Stock") equal to 0.350877 (the "Exchange Ratio"). On the terms and subject to the conditions set forth in the Amended Merger Agreement, at the Effective Time, each share of DISH Network Class B common stock, par value $0.01 per share ("DISH Network Class B Common Stock" and, together with DISH Network Class A Common Stock and DISH Network Class C Common Stock, "DISH Network Common Stock"), outstanding immediately prior to the Effective Time was converted into the right to receive a number of validly issued, fully paid and non-assessable shares of EchoStar Class B common stock, par value $0.001 per share (the "EchoStar Class B Common Stock" and, together with the EchoStar Class A Common Stock, the "EchoStar Common Stock"), equal to the Exchange Ratio.

Any shares of DISH Network Common Stock that were held in DISH Network's treasury or held directly by us or Merger Sub immediately prior to the Effective Time were cancelled and cease to exist and no consideration was paid in respect thereof. All shares of the DISH Network Class A Common Stock were delisted from the Nasdaq Global Select Market ("NASDAQ") and deregistered under the Securities Exchange Act of 1934, as amended.

The EchoStar Common Stock issued to the Ergen DISH Stockholders (as defined in the Amended Merger Agreement) as Merger consideration was issued through a private placement exemption from registration under the Securities Act of 1933, as amended (the "Securities Act"). At the Effective Time, each share of DISH Network Class A Common Stock owned by the Ergen DISH Stockholders immediately prior to the Effective Time was converted into the right to receive a number of shares of EchoStar Class A Common Stock equal to the Exchange Ratio, and (b) each share of DISH Network Class B Common Stock owned by the Ergen DISH Stockholders immediately prior to the Effective Time was converted into the right to receive a number of shares of EchoStar Class B Common Stock equal to the Exchange Ratio.

Concurrently with the entry into the Amended Merger Agreement, the Ergen EchoStar Stockholders (as defined in the Amended Merger Agreement), the Ergen DISH Stockholders (collectively, the "Ergen Stockholders"), we and DISH Network entered into an amended and restated support agreement (the "Amended Support Agreement").

In connection with the completion of the Merger, and pursuant to the Amended and Restated Support Agreement, the Ergen Stockholders, we and DISH Network, on December 31, 2023, we and the Ergen Stockholders entered into a registration rights agreement (the "Registration Rights Agreement"). The Registration Rights Agreement provides the Ergen Stockholders, and their affiliates who become parties thereto, with certain registration rights relating to the shares of EchoStar Common Stock, which they beneficially own, including: (i) the right to demand shelf registration as well as registration on long and short form registration statements and; (ii) "piggyback" registration rights to be included in future registered offerings by us of our equity securities, in each case, subject to certain requirements and customary conditions. The Registration Rights Agreement sets forth customary registration procedures, including an agreement by us to make appropriate officers available to participate in roadshow presentations and cooperate as reasonably requested in connection with any underwritten offerings. We also agreed to indemnify the Ergen Stockholders and their affiliates with respect to liabilities resulting from untrue statements or omissions in any registration statement used in any such registration, other than untrue statements or omissions based on or contained in information furnished to us for use in a registration statement by a participating stockholder.

For more information and a copy of the Amended Merger Agreement, the Amended Support Agreement and the Registration Rights Agreement, see the Form 8-K of EchoStar Corporation filed on October 3, 2023 and the Form 8-K of EchoStar Corporation filed on January 2, 2024.

With the Merger complete, we are currently focused on the process of integrating our and DISH Network's business in a manner that facilitates synergies, cost savings, growth opportunities and achieves other anticipated benefits (the "Integration").

Segments

EchoStar Corporation is a holding company. Its subsidiaries operate four primary business segments: (1) Pay-TV; (2) Retail Wireless; (3) 5G Network Deployment; and (4) Broadband and Satellite Services.

Pay-TV

We offer pay-TV services under the DISH® brand and the SLING® brand (collectively "Pay-TV" services). The DISH branded pay-TV service consists of, among other things, Federal Communications Commission ("FCC") licenses authorizing us to use direct broadcast satellite ("DBS") and Fixed Satellite Service ("FSS") spectrum, our owned and leased satellites, receiver systems, broadcast operations, a leased fiber optic network, in-home service and call center operations, and certain other assets utilized in our operations ("DISH TV"). We also design, develop and distribute receiver systems and provide digital broadcast operations, including satellite uplinking/downlinking, transmission and other services to third-party pay-TV providers. The SLING branded pay-TV services consist of, among other things, multichannel, live-linear and on-demand streaming over-the-top ("OTT") Internet-based domestic, international, Latino and Freestream video programming services ("SLING TV"). As of December 31, 2023, we had 8.526 million Pay-TV subscribers in the United States, including 6.471 million DISH TV subscribers and 2.055 million SLING TV subscribers.

Retail Wireless

We offer nationwide prepaid and postpaid retail wireless services to subscribers primarily under our Boost Mobile®, Boost postpaid and Gen Mobile® brands ("Retail Wireless" services), as well as a competitive portfolio of wireless devices. Prepaid wireless subscribers generally pay in advance for monthly access to wireless talk, text, and data services. Postpaid wireless subscribers are qualified to pay after receiving wireless talk, text, and data services, and may also qualify for financing arrangements for wireless devices.

We are currently operating our Retail Wireless segment primarily as a mobile virtual network operator ("MVNO") as we continue our 5G Network Deployment and commercialize our 5G Network, as defined below. We are transitioning our Retail Wireless segment to a mobile network operator ("MNO") as our 5G Network becomes commercially available and we are currently activating subscribers onto our 5G Network in markets where we have reached voice over new radio ("VoNR").

As an MVNO, today we depend on T-Mobile and AT&T to provide us with network services under the amended Master Network Services Agreement ("MNSA") and Network Services Agreement (the "NSA"), respectively. Under the NSA, we expect AT&T will become our primary network services provider. As of December 31, 2023, we had 7.378 million Wireless subscribers.

5G Network Deployment

We have invested a total of over $30 billion in Wireless spectrum licenses, which includes over $10 billion in initial noncontrolling investments in certain entities. The $30 billion of investments related to Wireless spectrum licenses does not include $9 billion of capitalized interest related to the carrying value of such licenses. See Note 2 and Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information. We plan to commercialize our Wireless spectrum licenses through the completion of the nation's first cloud-native, Open Radio Access Network ("O-RAN") based 5G network (our "5G Network Deployment").

We have committed to deploy a facilities-based 5G broadband network (our "5G Network") capable of serving increasingly larger portions of the U.S. population at different deadlines, including 20% of the U.S. population by June 2022 and 70% of the U.S. population by June 2023.

On June 14, 2022, we announced we had successfully reached our 20% population coverage requirement. In addition, we announced and certified to the FCC that as of June 14, 2023, we offer 5G broadband service to over 73% of the U.S. population, or more than 246 million Americans nationwide. On September 29, 2023, the FCC confirmed we have met all of our June 14, 2023 band-specific 5G deployment commitments, and two of our three nationwide 5G commitments. The single remaining 5G commitment, that at least 70% of the U.S. population has access to average download speeds equal to 35 Mbps, will be confirmed using the drive test methodology agreed to and approved by the FCC. We have six months from September 29, 2023 to complete this drive test. We now have the largest commercial deployment of 5G VoNR in the world reaching approximately 200 million Americans and 5G broadband service reaching approximately 250 million Americans.

Broadband and Satellite Services

We are an industry leader in both networking technologies and services, innovating to deliver the solutions that power a connected future for people, enterprises and things everywhere. We provide broadband services to consumer customers, which include home and small to medium-sized businesses. We also provide satellite and multi-transport technologies and managed network services to telecommunications providers, aeronautical service providers, civilian and defense government entities, and other enterprise customers.

Our EchoStar XXIV satellite began service in December 2023, bringing additional broadband capacity to North and South America. We will leverage EchoStar XXIV to serve the unserved and underserved consumer markets in the Americas as well as enterprise and government markets.

We also design, provide and install gateway and terminal equipment to customers for other satellite systems. In addition, we design, develop, construct and provide telecommunication networks comprising satellite ground segment systems and terminals to mobile system operators and other enterprise customers. We also offer a robust suite of integrated, multi-transport solutions to enable airline and airline service providers to deliver reliable in-flight network connectivity serving both commercial and business aviation.

PAY-TV

Business Strategy – Pay-TV

Our Pay-TV segment business strategy is to be the best provider of video services in the United States by providing products with the best technology, outstanding customer service, and great value. We promote our Pay-TV services by providing our subscribers with a better "price-to-value" relationship and experience than those available from other subscription television service providers. We market our SLING TV services to consumers who do not subscribe to traditional satellite and cable pay-TV services, as well as to current and recent traditional pay-TV subscribers who desire a lower cost alternative.

- *Products with the Best Technology.* We offer a wide selection of local and national HD programming and are a technology leader in our industry, offering award-winning DVRs (including our Hopper® whole-home HD DVR), multiple tuner receivers, video on demand and external hard drives. We offer several SLING TV services, including SLING Orange (our single-stream SLING domestic service), SLING Blue (our multi-stream Sling domestic service), International, Latino and Freestream, among others, as well as add-on extras, direct to consumer services, pay-per-view events and a cloud-based DVR service.

- *Outstanding Customer Service.* We strive to provide outstanding customer service by, among other things, improving the quality of the initial installation of subscriber equipment, improving the reliability of our equipment, better educating our customers about our products and services, and resolving customer problems promptly and effectively when they arise.

- *Great Value.* We have historically been viewed as the low-cost provider in the pay-TV industry in the United States. However, today with DISH TV, we are focused on a message of Service, Value and Technology. We also offer a differentiated customer experience with our award-winning Hopper® platform that integrates voice control powered by Google Assistant, access to apps including Netflix, Prime Video and YouTube, and the ability to watch live, recorded and On Demand content anywhere with the DISH Anywhere mobile application. As another example, our SLING Orange service and our SLING Blue service are two of the lowest priced live-linear online streaming services in the industry.

Products and Services – Pay-TV

DISH TV services. We offer a wide selection of video services under the DISH TV brand, with access to hundreds of channels depending on the level of subscription. Our standard programming packages generally include programming provided by national cable networks. We also offer programming packages that include local broadcast networks, specialty sports channels, premium movie channels and Latino and international programming. Our Latino and international programming packages allow subscribers to choose from over 300 channels in over 20 languages.

In addition, we offer our DISH TV subscribers streaming access through DISH On Demand® to thousands of movies and television shows via their TV or Internet-connected devices.

Our DISH TV subscribers also have the ability to use dishanywhere.com and our DISH Anywhere® mobile applications on Internet-connected devices to view authorized content, search program listings and remotely control certain features of their DVRs. Dishanywhere.com and our DISH Anywhere mobile applications provide access to thousands of movies and television shows.

SLING TV services. Our SLING TV services require an Internet connection and are available on multiple streaming-capable devices including, among others, streaming media devices, TVs, tablets, computers, game consoles and phones. We offer domestic, International, Latino and Freestream video programming services. We offer domestic SLING TV services as a single-stream service branded SLING Orange and a multi-stream service branded SLING Blue, which includes, among other things, the ability to stream on up to three devices simultaneously. We also offer add-on extras, direct to consumer services, pay-per-view events and a cloud-based DVR service.

Distribution Channels – Pay-TV

We operate in the consumer market in the United States and use print, radio, television and Internet media, on a local and national basis to motivate potential subscribers to contact DISH TV and SLING TV, visit our websites or contact independent third party retailers. We often offer our new DISH TV subscribers certain programming at no additional charge and/or promotional pricing during a commitment period. We often offer our new SLING TV subscribers free trials and/or streaming-capable devices at no additional charge and/or promotional pricing.

While we offer receiver systems and programming through direct sales channels, a meaningful percentage of our gross new DISH TV subscriber activations are generated through independent third parties such as small retailers, direct marketing groups, local and regional consumer electronics stores, nationwide retailers, and telecommunications companies. In general, we pay these independent third parties a mix of upfront and monthly incentives to solicit orders for our services and provide customer service. We offer our SLING TV services through direct sales channels and third-party marketing agreements.

We incur significant upfront costs to provide our new DISH TV subscribers with in-home equipment, which most of our new DISH TV subscribers lease from us. We also incur significant upfront costs to install satellite dishes and receivers in the homes of our new DISH TV subscribers.

Competition – Pay-TV

Competition has intensified in recent years as the pay-TV industry has matured. We and our competitors increasingly must seek to attract a greater proportion of new subscribers from each other's existing subscriber bases rather than from first-time purchasers of pay-TV services. We face substantial competition from established pay-TV providers and broadband service providers and increasing competition from companies providing/facilitating the delivery of video content via the Internet to computers, televisions, and other streaming and mobile devices, including wireless service providers. In recent years, industry consolidation and convergence has created competitors with greater scale and multiple product/service offerings. These developments, among others, have contributed to intense and increasing competition, and we expect such competition to continue.

We incur significant costs to retain our existing DISH TV subscribers, generally as a result of upgrading their equipment to next generation receivers, primarily including our Hopper® receivers, and by providing retention credits. Our DISH TV subscriber retention costs may vary significantly from period to period.

Many of our competitors have been especially aggressive by offering discounted programming and services for both new and existing subscribers, including, but not limited to, bundled offers combining broadband, video and/or wireless services and other promotional offers. Certain competitors have been able to subsidize the price of video services with the price of broadband and/or wireless services.

Our Pay-TV services also face increased competition from programmers and other companies who distribute video directly to consumers over the Internet, as well as traditional satellite television providers, cable companies and large telecommunications companies that are increasing their Internet-based video offerings. We also face competition from providers of video content, many of which are providers of programming content to us, that distribute content over the Internet including services with live-linear television programming, as well as single programmer offerings and offerings of large libraries of on-demand content, including in certain cases original content. These product offerings include, but are not limited to, Netflix, Hulu, Apple+, Prime Video, YouTube TV, Disney+, ESPN+, Paramount+, Max, STARZ, Peacock, Fubo, Philo and Tubi and certain bundles of these offerings.

Significant changes in consumer behavior regarding the means by which consumers obtain video entertainment and information in response to digital media competition could have a material adverse effect on our business, results of operations and financial condition or otherwise disrupt our business.

In particular, consumers have shown increased interest in viewing certain video programming in any place, at any time and/or on any broadband or Internet-connected device they choose. Online content providers may cause our subscribers to disconnect our DISH TV services ("cord cutting"), downgrade to smaller, less expensive programming packages ("cord shaving") or elect to purchase through these online content providers a certain portion of the services that they would have historically purchased from us.

Mergers and acquisitions, joint ventures and alliances among cable television providers, telecommunications companies, programming providers and others may result in, among other things, greater scale and financial leverage and increase the availability of offerings from providers capable of bundling video, broadband and/or wireless services in competition with our services and may exacerbate the risks described in our public filings. These transactions may affect us adversely by, among other things, making it more difficult for us to obtain access to certain programming networks on nondiscriminatory and fair terms, or at all.

For further information see *"Item 1A – Risk Factors – Competition and Economic Risks – We face intense and increasing competition from providers of video, broadband and/or wireless services, which may require us to further increase subscriber acquisition and retention spending or accept lower subscriber activations and higher subscriber churn."*

RETAIL WIRELESS

Business Strategy - Retail Wireless

We offer nationwide prepaid and postpaid Retail Wireless services to subscribers primarily under our Boost Mobile, Boost postpaid and Gen Mobile brands, as well as a competitive portfolio of wireless devices. We offer customers value by providing choice and flexibility in our Retail Wireless services. Prepaid wireless subscribers generally pay in advance for monthly access to wireless talk, text, and data services. Postpaid wireless subscribers are qualified to pay after receiving wireless talk, text, and data services, and may also qualify for financing arrangements for wireless devices.

Boost postpaid. In the fourth quarter of 2022, we launched our Boost postpaid wireless service, to a limited number of customers who had signed up for early registration. During 2023, we launched our nationwide expansion of our Boost postpaid wireless service, and at the end of the third quarter of 2023, we began offering the iPhone 15 on our 5G Network and expanded our Boost postpaid offering through a distribution partnership with Amazon.

We are currently operating our Retail Wireless segment primarily as an MVNO as we continue our 5G Network Deployment and commercialize and grow customer traffic on our 5G Network. We are transitioning our Retail Wireless segment to an MNO as our 5G Network becomes commercially available. We are currently activating Boost Mobile and Boost postpaid subscribers with compatible devices onto our 5G Network in markets where we have launched 5G voice services. Within our MVNO operations, today we depend on T-Mobile and AT&T to provide us with network services under MNSA and NSA, respectively. Under the NSA, we expect AT&T will become our primary network services provider.

Our Retail Wireless business strategy is to expand our current target segments and profitably grow our subscriber base by acquiring and retaining high quality subscribers while we continue our 5G Network Deployment. We intend to acquire high quality subscribers by providing competitive offers, choice and outstanding customer service that better meet those subscribers' needs and budget.

Products and Services - Retail Wireless

Currently, we offer Wireless subscribers competitive consumer plans with no annual service contracts and monthly service plans including high-speed data and unlimited talk and text. We also offer a variety of value-added services, including device payment and protection plans.

Distribution Channels - Retail Wireless

We operate in the consumer market in the United States and use, among other things, print, radio, television and Internet media, on a local and national basis to motivate potential subscribers to contact us, visit our websites or contact independent third party retailers.

We have both an indirect sales channel, which includes third-party owned retail stores and big box stores, and a direct sales channel, which services customers online. Through the indirect sales channel, we use direct distribution partners to facilitate product delivery to the third-party retailers. We currently market and distribute our products and services indirectly through third-party owned Boost-branded stores, multi-branded stores, national retail stores (such as Target, Best Buy, and Walmart stores) and other stores (such as convenience and grocery stores).

We have relationships with most large manufacturers of wireless devices. We can incur significant upfront costs to subsidize wireless devices offered under promotional pricing to consumers.

Competition - Retail Wireless

The Boost Mobile and Gen Mobile brands operate within the prepaid wireless industry segment and the Boost postpaid brand operates within the postpaid wireless industry segment. Retail wireless is a mature market with moderate year over year organic growth. Competitors include, among others, providers who offer similar communication services, such as talk, text and data. Competitive factors within the wireless communications services industry include, but are not limited to, pricing, market saturation, service and product offerings, customer experience and service quality. We compete with a number of national wireless carriers, including Verizon, AT&T and T-Mobile, all of which are significantly larger than us, serve a significant percentage of all wireless subscribers and enjoy scale advantages compared to us. Verizon, AT&T, and T-Mobile are currently the only nationwide MNOs in the United States.

Primary competitors to our Retail Wireless segment include, but are not limited to, Metro PCS (owned by T-Mobile), Cricket Wireless (owned by AT&T), Visible (owned by Verizon), Tracfone Wireless (owned by Verizon), and other MVNOs such as Consumer Cellular, Mint Mobile (T-Mobile has reached an agreement to acquire) and Xfinity Mobile.

5G NETWORK DEPLOYMENT

Business Strategy – 5G Network Deployment

We have invested a total of over $30 billion in Wireless spectrum licenses, which includes over $10 billion in initial noncontrolling investments in certain entities. The $30 billion of investments related to Wireless spectrum licenses does not include $9 billion of capitalized interest related to the carrying value of such licenses. See Note 2 and Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

We will need to raise additional capital in the future, which may not be available on favorable terms, to fund the efforts described below, as well as, among other things, make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. There can be no assurance that we will be able to profitably deploy these Wireless spectrum licenses, which may affect the carrying amount of these assets and our future financial condition or results of operations. See Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

DISH Network Spectrum

We have invested a total of over $30 billion to acquire certain Wireless spectrum licenses. These Wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. Our 5G Network Deployment segment strategy is to commercialize our Wireless spectrum licenses through the completion of the nation's first cloud-native, Open Radio Access Network ("O-RAN") based 5G network (our "5G Network Deployment"). We have committed to deploy our 5G Network capable of serving increasingly larger portions of the U.S. population at different deadlines, including 20% of the U.S. population by June 2022 and 70% of the U.S. population by June 2023. If by June 2023, we are offering 5G broadband service to at least 50% of the U.S. population but less than 70% of the U.S. population, the 70% June 2023 deadline will be extended automatically to June 2025; however, as a result, we may, under certain circumstances, potentially be subject to certain penalties. On June 14, 2022, we announced we had successfully reached our 20% population coverage requirement. In addition, we announced and certified to the FCC that as of June 14, 2023, we offer 5G broadband service to over 73% of the U.S. population, or more than 246 million Americans nationwide.

On September 29, 2023, the FCC confirmed we have met all of our June 14, 2023 band-specific 5G deployment commitments, and two of our three nationwide 5G commitments. The single remaining 5G commitment, that at least 70% of the U.S. population has access to average download speeds equal to 35 Mbps, will be confirmed using the drive test methodology agreed to and approved by the FCC. We have six months from September 29, 2023 to complete this drive test. We now have the largest commercial deployment of 5G VoNR in the world reaching approximately 200 million Americans and 5G broadband service reaching approximately 250 million Americans.

As a result of us providing 5G broadband service to over 50% of the U.S. population by June 14, 2023, the final build-out deadlines have been extended automatically to June 14, 2025 for us to offer 5G broadband service to at least 70% of the population in each Economic Area for the 700 MHz Licenses and AWS-4 Licenses and at least 75% of the population in each Economic Area for the H Block Licenses.

We may need to make significant additional investments or partner with others to, among other things, continue our 5G Network Deployment and further commercialize, build-out and integrate these licenses and related assets and any additional acquired licenses and related assets, as well as to comply with regulations applicable to such licenses. Depending on the nature and scope of such activities, any such investments or partnerships could vary significantly. In addition, as we continue our 5G Network Deployment, we have and may continue to incur significant additional expenses related to, among other things, research and development, wireless testing and ongoing upgrades to the wireless network infrastructure, software and third-party integration. As a result of these investments, among other factors, we plan to raise additional capital, which may not be available on favorable terms. We may also determine that additional wireless spectrum licenses may be required for our 5G Network Deployment and to compete effectively with other wireless service providers. See Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

DISH Network Noncontrolling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses

During 2015, through our wholly-owned subsidiaries American AWS-3 Wireless II L.L.C. (“American II”) and American AWS-3 Wireless III L.L.C. (“American III”), we initially made over $10 billion in certain noncontrolling investments in Northstar Spectrum, LLC (“Northstar Spectrum”), the parent company of Northstar Wireless, L.L.C. (“Northstar Wireless,” and collectively with Northstar Spectrum, the “Northstar Entities”), and in SNR Wireless HoldCo, LLC (“SNR HoldCo”), the parent company of SNR Wireless LicenseCo, LLC (“SNR Wireless,” and collectively with SNR HoldCo, the “SNR Entities”), respectively. On October 27, 2015, the FCC granted certain AWS-3 wireless spectrum licenses (the “AWS-3 Licenses”) to Northstar Wireless and to SNR Wireless, respectively, which are recorded in “Regulatory authorizations, net” on our Consolidated Balance Sheets. Under the applicable accounting guidance in Accounting Standards Codification 810, *Consolidation* (“ASC 810”), Northstar Spectrum and SNR HoldCo are considered variable interest entities (“VIEs”) and, based on the characteristics of the structure of these entities and in accordance with the applicable accounting guidance, we consolidate these entities into our financial statements. On October 12, 2023, the FCC consented to the sale of Northstar Manager, LLC’s (“Northstar Manager”) ownership interests in Northstar Spectrum, which we purchased for a total of approximately $109 million. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to Northstar Spectrum as of the purchase date and we continue to consolidate the Northstar Entities as wholly-owned subsidiaries. Subsequent to December 31, 2023, the FCC consented to the sale of SNR Wireless Management, LLC’s (“SNR Management”) ownership interests in SNR HoldCo, which was purchased by our direct wholly-owned subsidiary EchoStar SNR HoldCo LLC for a total of approximately $442 million on February 16, 2024. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to SNR HoldCo as of the purchase date and we continue to consolidate the SNR Entities as wholly-owned subsidiaries. See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

BROADBAND AND SATELLITE SERVICES

Business Strategy – Broadband and Satellite Services

Our overall business objective is to maintain and improve our leadership position and competitive advantage through development of leading-edge technologies and services marketed to selected sectors within the consumer, enterprise and government markets globally.

We expect demand for broadband internet access, connectivity, networking and related value-added services will continue to grow across all major end-user sectors – consumer, businesses, enterprises and government. Our strategic objective is to maintain our leadership position and grow our competitive advantage by using our satellite assets, expertise, technologies, capital, investments, global presence, relationships, spectrum assets, and other capabilities for development of leading-edge technologies and services marketed to targeted sectors within these markets globally.

Our strategy consists of the following key aspects:

- ***Leverage the capabilities of our industry leading EchoStar XXIV satellite***. We continue to focus on delivering broadband services to the unserved and underserved markets in the Americas, with a vertical integration strategy. Following the service launch of the EchoStar XXIV satellite in December 2023, which provides us with additional capabilities and capacity, we have introduced new higher speed, higher data Hughesnet ® service plans, including a new Hughesnet Fusion® offering.

- ***Invest in high growth segments within our enterprise business***. We have a strong focus on growing our global enterprise business by leveraging our network connectivity solutions, managed services portfolio and internally-developed technologies and products.
  - Our strategy is to grow managed services by offering the provision and management of advanced services, such as software-defined wide area network ("SD-WAN") and cybersecurity, to enterprises and businesses that are seeking to outsource management. We believe that the demand for such services will remain high due to the challenges that many businesses face in managing these services internally.
  - We will continue improving operational scale and reducing operational cost through the specialized use of artificial intelligence for IT operations ("AIOps"), automation, and process efficiencies.
  - We intend to continue our growth in the in-flight connectivity market by providing a robust suite of integrated multi-transport solutions enabling airlines to deliver WiFi solutions to their passengers. We will leverage multi-orbit, i.e., Low Earth Orbit ("LEO"), Medium Earth Orbit ("MEO") and Geosynchronous Equatorial Orbit ("GEO") solutions incorporating our own and partners' satellite assets as well as our state-of-the-art antenna and other technologies.
  - We intend to exploit fixed access and wireless technologies for enterprise and government customers by leveraging our expertise in wireless and managed services.
  - We intend to continue leadership in the satellite technology platform market by focusing on development of advanced ground segments for next generation satellite systems, such as LEOs and flexible payload satellites.

- ***Continued focus on growing our business and cash-generation.*** We intend to focus on growing our business while improving efficiency, particularly on profitable growth and cash generation through increased discipline in capital expenditure and selling, general, and administrative spend. We continue to execute our strategy of maximizing financial returns by focusing on higher economic value enterprise and government applications in the U.S. and Latin America as well as by more selective customer screening.

- ***Continue development of emerging Non-Terrestrial-Networks ("NTN") opportunities***. The adoption of NTN as a part of the worldwide wireless 3rd Generation Partnership Project ("3GPP") standards has created significant opportunities for our industry by combining satellite networks with terrestrial 5G networks. We believe our combination of resources, investments, know-how, and partnerships are second to none and intend to capitalize on this opportunity as described below:
  - Spectrum Assets: We hold certain high priority S-band International Telecommunication Union ("ITU") rights, and mobile satellite service ("MSS") authorizations in the US, Canada, Europe, Mexico and Chile. We are in the process of applying for and receiving additional authorizations globally. We have positioned ourselves to continue to develop the S-band spectrum globally by acquiring Sirion Global Pty Ltd., which we have renamed EchoStar Global Australia Pty Ltd ("EchoStar Global"). EchoStar Global has brought into use the ITU global S-band non-geostationary satellite spectrum rights for MSS.

  - In February of 2023, we announced an agreement with Astro Digital US, Inc. ("Astro Digital"), a designer, manufacturer and operator of small satellite systems, for the construction of a global S-band MSS network. Under the agreement, Astro Digital will manufacture the satellites for the constellation, which we expect will deliver [global] [check this] Internet of Things, machine-to-machine and other data services beginning in 2025.
  - Expertise and operational infrastructure in satellite and 5G: We believe we are at the forefront of the industry with deep expertise and capabilities in satellite technologies and services as well as 5G networks and services.
  - Partnerships and Ecosystem: We have relationships with leading service providers and operators globally, and this ecosystem delivers added value to our customers.

- ***Continue to explore attractive new domestic and international strategic initiatives***. We intend to continue selective exploration of opportunities to pursue investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions and other strategic initiatives and transactions, domestically and internationally, that we believe may allow us to increase our existing market share, expand into new markets, and acquire new customers through the use of multi-transport technologies, increase our satellite capacity, broaden our portfolio of services, products and intellectual property and strengthen our relationships with our customers.

- ***Develop new and improved technologies***. We believe that our engineering capabilities enable us to develop and deploy cutting edge technologies, license our technologies to others and maintain a leading technological position in the industries in which we are active.

Products and Services – Broadband and Satellite Services

We provide broadband satellite technologies and broadband internet products and services to consumer customers. We provide broadband network technologies, managed services, equipment, hardware, satellite services and communications solutions to government and enterprise customers. We also design, provide and install gateway and terminal equipment to customers for other satellite systems. In addition, we design, develop, construct and provide telecommunication networks comprising satellite ground segment systems and terminals to mobile system operators and our enterprise customers.

Our Broadband and Satellite Services segment incorporates technology advancements that reduce costs and increase the functionality and reliability of our products and services. Through, among other things, advanced and proprietary methodologies, technologies, software and techniques, we continue to improve the efficiency of our networks. We invest in technologies to enhance our system and network management capabilities, specifically our managed services for enterprises. We also continue to invest in next generation technologies that can be applied to our future products and services. In addition, we are also providing wireline and wireless capacity to utilize in markets that include residential, community WiFi, backhaul, and other enterprise broadband and multi-transport services.

Our Broadband and Satellite Services segment currently uses capacity from our owned and leased satellites to provide services to our customers. We also use other multi-transport capacity that includes cable, fiber, 5G, and 4G/ Long-Term Evolution ("LTE"). The launch of our EchoStar XXIV satellite service in December 2023, brings to market additional broadband capacity across North and South America and is expected to be an integral part of our satellite service business.

Customers – Broadband and Satellite Services

Our consumer customers consist of home and small to medium-sized business in the Americas. We provide broadband satellite technologies and broadband internet products and services to these customers. In addition, we are also providing wireline and wireless capacity to utilize in markets that include residential, community WiFi, and backhaul.

Our enterprise customers include, but are not limited to, retailers, financial institutions, aircraft connectivity providers, lottery agencies, and companies with multi-branch networks that rely on satellite or terrestrial networks for critical communication across wide geographies, as well as the U.S government. Most of our enterprise customers have long-term contracts with us for the services they purchase. Our Broadband and Satellite Services segment also designs, provides and installs gateway and terminal equipment to customers for other satellite systems and provides satellite ground segment systems and terminals for other satellite systems, including mobile system operators. Developments toward the launch of next-generation satellite systems, including LEO, MEO and geostationary systems, as well as other multi-transport technologies, could provide additional opportunities to increase demand for our equipment, hardware, technology and services.

Our satellite capacity is currently used by our enterprise customers for a variety of applications, including:

- ***Fixed Satellite Services ("FSS")***. We provide satellite services to internet service providers, broadcast news organizations, and content providers who use our satellites to deliver programming and internet.

- ***Enterprise Services and Solutions***. We provide satellite and technical services, as well as integrated solutions to various enterprise customers.

- ***Network Services***. We provide satellite services to companies for private networks that allow delivery of video and data services for corporate communications.

- ***NTN and IOT Services.*** We provide services enabling enterprises and organizations to deploy Internet of Things ("IOT") to remotely collect and transmit sensor data.

Competition – Broadband and Satellite Services

Our industry is highly competitive. As a global provider of network technologies, products and services, our Broadband and Satellite Services Segment competes with a large number of telecommunications service providers, which puts pressure on prices and margins. To compete effectively, we emphasize, among other things, our network quality, customization capability, offering of networks as a turnkey managed service, position as a single point of contact for products and services and competitive prices.

In our consumer broadband satellite technologies and internet services markets, we compete against traditional telecommunications and wireless carriers, other satellite internet providers, as well as fiber optic, cable, and wireless internet service providers. Customers consider cost, speed and accessibility to be key determining factors in the selection of a service provider. In addition, government subsidies, such as the Federal Communication Commission's ("FCC") Rural Development Opportunity Fund, can have the effect of subsidizing the growth of our wired, wireless and satellite competitors. Our primary satellite competitors in the North American consumer market are ViaSat Communications, Inc., which is owned by ViaSat, Inc. ("ViaSat"), and Space Exploration Technologies Corp. ("SpaceX"). Both ViaSat and SpaceX have also entered the South and Central American consumer markets. We seek to differentiate ourselves based on the ubiquitous availability of our service, quality, proprietary technology, and distribution channels.

In our enterprise markets, we compete against multiple categories of providers. In the managed services area, we compete against providers of satellite-based and terrestrial-based networks, including fiber optic, cable, wireless internet service, multiprotocol label switching (MPLS) and internet protocol-based virtual private networks (VPN), which vary by region. In the in-flight connectivity market, we compete against direct and indirect providers of passenger WiFi services, such as ViaSat and SpaceX.

To compete effectively, we emphasize our network quality, customization capability, ability to offer networks as a turnkey managed service, position as a single point of contact for products and services and competitive prices. Our principal competitors for the supply of satellite technology platforms are Gilat Satellite Networks Ltd, ViaSat, and ST Engineering iDirect, Inc. To differentiate ourselves from our competitors, we emphasize particular technological features of our products and services, our ability to customize networks and perform desired development work and the quality of our customer service. We also face competition from resellers and numerous local companies who purchase equipment and sell services to local customers, including domestic and international telecommunications operators, cable companies and other major carriers.

In the emerging NTN market, we expect to compete with several companies targeting this area, with technology approaches that may be similar to us or in some cases different. We will compete on the basis of our strong spectrum position, expertise in satellite and 5G technologies and our global industry relationships.

Manufacturing – Broadband and Satellite Services

Certain products in our Broadband and Satellite Services segment are assembled at our facilities in Maryland, and we outsource a portion of the manufacturing of other products to third parties. We believe that our manufacturing facilities have sufficient capacity to handle current demand. We adjust our capacity based on, among other things, our production requirements. We also work with certain third-party vendors for the development and manufacture of components that are integrated into our products. We develop dual sourcing capabilities for critical parts when practical and we evaluate outsourced subcontract vendors on a periodic basis. Our operations group, together with our engineering group, works with our vendors and subcontractors to reduce development costs, to increase production efficiency, and to obtain components at lower prices.

NEW BUSINESS OPPORTUNITIES

From time to time we evaluate opportunities for strategic investments or acquisitions that may complement our current services and products, enhance our technical capabilities, improve or sustain our competitive position, or otherwise offer growth opportunities.

GOVERNMENT REGULATIONS

Our operations, particularly our global satellite operations, Pay-TV operations, our Retail Wireless services and 5G Network Deployment and Broadband and Satellite Services businesses and our Wireless spectrum licenses are subject to significant government regulation and oversight, primarily by the FCC and, to a certain extent, by Congress, other federal agencies and international, foreign, state and local authorities. We are subject to telecommunications regulation by a number of regulatory bodies including the FCC, other U.S. federal and state regulators and government agencies, the ITU and regulators and governments in other countries and regions where we hold licenses including the E.U., the U.K., India, Australia and several Latin American countries. In addition, we are also subject to the export control laws and regulations and trade sanctions laws and regulations of the U.S. and other countries with respect to the export of telecommunications equipment and services. In addition, in the U.S. and some other countries we are subject to country specific approvals of our products.

Depending upon the circumstances, non-compliance with applicable legislation or regulations could result in suspension or revocation of our licenses or authorizations, the termination or loss of contracts or the imposition of contractual damages, civil fines or criminal penalties, any of which could have a material adverse effect on our business, financial condition and results of operations. These governmental authorities could also adopt regulations or take other actions that would adversely affect our business prospects.

Furthermore, any government policy changes, which may be substantial, could increase regulatory uncertainty. The adoption or modification of laws or regulations relating to video programming distribution, satellite services, wireless telecommunications, broadband, the Internet or other areas of our business could limit or otherwise adversely affect the manner in which we currently conduct our business. In addition, the manner in which regulations or legislation in these areas may be interpreted and enforced cannot be precisely determined, which in turn could have an adverse effect on our business, financial condition and results of operations.

As detailed below, our Pay-TV operations are subject to FCC jurisdiction, including, without limitation, the FCC's rules for satellite licensing, placement of satellites, interference avoidance, spectrum sharing, and coordination with other satellite systems. We must comply with FCC rules promulgating public interest requirements for DBS providers, security functionality for video providers, technology standards, media ownership, carriage of cable programming, and net neutrality. In addition, the Copyright Act of 1976 (the "Copyright Act") and the Communications Act of 1934 (the "Communications Act") govern our carriage of broadcast signals.

Our 5G Network Deployment services and our Wireless spectrum licenses are subject to regulation by the FCC and, depending on the jurisdiction, other federal, state and local, as well as international, governmental authorities and regulatory agencies, including, among other things, regulations governing the licensing, construction, operation, sale and interconnection arrangements of wireless telecommunications systems. In particular, the FCC imposes significant regulation on licensees of wireless spectrum with respect to how radio spectrum is used by licensees, the nature of the services that licensees may offer and how the services may be offered, and resolution of issues of interference between spectrum bands. The FCC grants wireless licenses for terms of generally 10-12 years that are subject to renewal or revocation. There can be no assurances that our Wireless spectrum licenses will be renewed. Failure to comply with FCC build-out requirements in a given license area may result in acceleration of other build-out requirements or in the modification, cancellation, or non-renewal of licenses. For further information related to our licenses and build-out requirements related to our Wireless spectrum licenses see Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K.

Our Pay-TV and 5G Network Deployment operations are subject to federal, state, and international laws relating to the collection, use, retention, security, and transfer of personally identifiable information. The regulatory framework for privacy and security issues worldwide is rapidly evolving and as a result implementation standards and enforcement practices are likely to remain uncertain for the foreseeable future. Any failure by us, our suppliers, or other parties with whom we do business to comply with these standards and practices or with other federal, state, or international regulations could result in proceedings against us by governmental entities or others. In many jurisdictions, enforcement actions and consequences for noncompliance are rising. In the United States, these include enforcement actions in response to rules and regulations promulgated under the authority of federal agencies and state attorneys general and legislatures and consumer protection agencies.

The following summary of regulatory developments and legislation in the United States is not intended to describe all present and proposed government regulation and legislation affecting the video programming distribution, satellite services, wireless telecommunications, broadband, and Internet industries. Government regulations that are currently the subject of judicial or administrative proceedings, legislative hearings or administrative proposals could change these industries to varying degrees. We cannot predict either the outcome of such proceedings or any potential impact they might have on these industries or on our operations.

FCC Regulations Applicable to Our Operations

FCC Jurisdiction over Satellite Operations. Non-governmental bodies, including commercial entities, that use radio frequencies to provide communications services to, from or within the U.S. are subject to the jurisdiction of the FCC under the Communications Act of 1934, as amended (the "Communications Act"). The Communications Act gives the FCC regulatory jurisdiction over many areas relating to communications operations, including:

- the assignment of satellite radio frequencies and orbital locations to specific services and companies, the licensing of satellites and earth stations and the granting of related authorizations;
- approval for the relocation of satellites to different orbital locations, the replacement of a satellite with another new or existing satellite and the authorization of specific earth stations to communicate with such newly relocated satellites;
- ensuring compliance with the terms and conditions of assignments, licenses, authorizations and approvals;
- avoiding harmful interference with other radio frequency emitters; and
- ensuring compliance with other applicable provisions of the Communications Act and FCC rules and regulations.

All satellite licenses issued by the FCC are subject to expiration unless extended by the FCC. Our U.S. FSS licenses generally have 15 year terms. We hold licenses and authorizations for satellite and earth stations as well as other services. To obtain and operate under such FCC licenses and authorizations, we must satisfy legal, technical qualification requirements and other conditions including, among other things, satisfaction of certain technical and ongoing due diligence obligations, maintaining bonds, payment of annual regulatory fees and various reporting requirements.

FCC Jurisdiction over our DBS Operations. The Communications Act gives the FCC broad authority to regulate the operations of satellite companies. Specifically, the Communications Act gives the FCC regulatory jurisdiction over the following areas relating to communications satellite operations:

- assignment of satellite radio frequencies and orbital locations, the licensing of satellites and earth stations, the granting of related authorizations, and the evaluation of the fitness of a company to be a licensee;
- approval for the relocation of satellites to different orbital locations or the replacement of an existing satellite with a new satellite;
- ensuring compliance with the terms and conditions of such assignments, licenses, authorizations and approvals, including required timetables for construction and operation of satellites;
- avoiding interference with other radio frequency emitters; and
- ensuring compliance with other applicable provisions of the Communications Act and FCC rules and regulations.

To obtain FCC satellite licenses and authorizations, satellite operators must satisfy strict legal, technical and financial qualification requirements. Once issued, these licenses and authorizations are subject to a number of conditions including, among other things, satisfaction of ongoing due diligence obligations, construction milestones, and various reporting requirements. Necessary federal approval of these applications may not be granted, may not be granted in a timely manner, or may be granted subject to conditions that may be cumbersome.

Overview of our DBS Satellites, Authorizations and Contractual Rights for Satellite Capacity. Our satellites are located in orbital positions, or slots, that are designated by their western longitude. An orbital position describes both a physical location and an assignment of spectrum in the applicable frequency band. Each DBS orbital position has 500 MHz of available Ku-band spectrum that is divided into 32 frequency channels. Several of our satellites also include spot-beam technology that enables us to increase the number of markets where we provide local channels, but reduces the number of video channels that could otherwise be offered across the entire United States.

The FCC has licensed us to operate a total of 82 DBS frequency channels at the following orbital locations:

- 21 DBS frequency channels at the 119 degree orbital location, capable of providing service to the continental United States (“CONUS”); and
- 29 DBS frequency channels at the 110 degree orbital location, capable of providing service to CONUS; and
- 32 DBS frequency channels at the 61.5 degree orbital location, capable of providing service to most of the United States – of these 32 channels, 30 are licensed to us and we are authorized to use the additional two channels under a grant of Special Temporary Authority.

In addition, we currently lease or have entered into agreements to lease capacity on satellites using the following spectrum at the following orbital locations:

- 500 MHz of Ku-band FSS spectrum that is divided into 18 frequency channels at the 118.7 degree orbital location, which is a Canadian FSS slot that is capable of providing service to CONUS, Alaska and Hawaii;
- 32 DBS frequency channels at the 129 degree orbital location, which is a Canadian DBS slot that is capable of providing service to most of the United States. As of July 2023, we no longer lease this satellite; and
- 32 DBS frequency channels at the 72.7 degree orbital location, which is a Canadian DBS slot that is capable of providing service to CONUS.

Duration of our DBS Licenses. Generally speaking, all of our satellite licenses are subject to expiration unless renewed by the FCC. The term of each of our DBS licenses is ten years. Our licenses are currently set to expire at various times. In addition, at various times we have relied on special temporary authorizations for our operations. A special temporary authorization is granted for a period of only 180 days or less, subject again to possible renewal by the FCC. From time to time, we apply for authorizations to use new satellites at our existing orbital locations. Generally, our FCC licenses and special temporary authorizations have been renewed, and our applications for new satellites at our existing orbital locations have been approved, by the FCC on a routine basis, but there can be no assurance that the FCC will continue to do so.

Opposition and Other Risks to our Licenses. Several third parties have opposed in the past, and we expect these or other parties to oppose in the future, some of our FCC satellite authorizations and pending and future requests to the FCC for extensions, modifications, waivers and approvals of our licenses. In addition, we must comply with numerous FCC reporting, filing and other requirements in connection with our satellite authorizations. Consequently, it is possible the FCC could revoke, terminate, condition or decline to extend or renew certain of our authorizations or licenses.

4.5 Degree Spacing "Tweener" Satellites. The FCC has proposed to allow so-called "tweener" DBS operations – DBS satellites operating at orbital locations 4.5 degrees (half of the usual nine degrees) away from other DBS satellites. The FCC granted authorizations to EchoStar and Spectrum Five for tweener satellites at the 86.5 and 114.5 degree orbital locations, respectively. These authorizations were subsequently cancelled because the FCC determined that the licensees did not meet certain milestone requirements. Tweener operations close to our licensed orbital locations could cause harmful interference to our service and constrain our future operations. In September 2019, the FCC completed its 2006 rulemaking on the operating and service rules for tweener satellites. As a result, among other things, the FCC will now accept new applications for tweener slots, and the applicant must show that either no other U.S. DBS operations would be affected or that it has successfully coordinated with affected parties. We cannot predict whether any parties will file for tweener slots and whether we will face interference or other operational constraints as a result.

Interference from Other Services Sharing Satellite Spectrum. Non-geostationary orbit ("NGSO") FSS satellites are permitted to operate on a co-primary basis in the same frequency band as our DBS and geostationary orbit ("GSO") FSS satellites. The FCC has also authorized the use of multichannel video distribution and data service ("MVDDS") licenses in the DBS band. MVDDS licenses were auctioned in 2004. MVDDS systems have been commercially deployed in a few markets. We have MVDDS licenses in 82 out of 214 geographical license areas, including Los Angeles, New York City, Chicago and several other major metropolitan areas. Despite regulatory provisions intended to protect DBS and FSS operations from harmful interference, there can be no assurance that operations by other satellites or terrestrial communication services in the DBS and FSS bands will not interfere with our DBS and FSS operations and adversely affect our business. Space Exploration Corporation ("Spacex"), OneWeb LLC ("OneWeb") and others have obtained FCC authority to launch and operate, or provide service from, NGSO satellite systems using a variety of spectrum bands, including the 12.2-12.7 GHz band, which we use for our DBS service, and where we also have certain licenses to provide one-way terrestrial MVDDS service. These systems are in the early stages of launch and deployment. If fully deployed by Spacex, OneWeb and others, there will be tens of thousands of NGSO satellites in orbit sharing our spectrum. There can be no assurance that they will not interfere with our DBS operations and adversely affect our business or that they will not hinder our ability to provide MVDDS service.

Satellite Competition from Additional Slots and Interference. DirecTV has obtained FCC authority to provide service to the United States from a Canadian DBS orbital slot, and we have obtained authority to provide service to the United States from a Canadian DBS orbital slot. The possibility that the FCC will allow service to the United States from additional foreign slots may permit additional competition against us from other satellite providers. It may also provide a means by which to increase our available satellite capacity in the United States. In addition, a number of administrations, such as Great Britain and the Netherlands, have requested authority to add orbital locations serving the United States close to our licensed slots. Such operations could cause harmful interference to our satellites and constrain our future operations.

Public Interest Requirements. The FCC imposes certain public interest obligations on our DBS licenses. These obligations require us to set aside four percent of our channel capacity exclusively for noncommercial programming for which we must charge programmers below-cost rates and for which we may not impose additional charges on subscribers. The Satellite Television Extension and Localism Act of 2010 ("STELA") required the FCC to decrease this set-aside to 3.5 percent for satellite carriers who provide retransmission of state public affairs networks in 15 states and are otherwise qualified. The FCC, however, has not yet determined whether we qualify for this decrease in set-aside.

The obligation to provide noncommercial programming may displace programming for which we could earn commercial rates and could adversely affect our financial results. We cannot be sure that, if the FCC were to review our methodology for processing public interest carriage requests, computing the channel capacity we must set aside or determining the rates that we charge public interest programmers, it would find them in compliance with the public interest requirements.

Retransmission Consent. The Copyright Act generally gives satellite companies a statutory copyright license to retransmit local broadcast channels by satellite back into the market from which they originated, subject to obtaining the retransmission consent of local network stations that do not elect "must carry" status, as required by the Communications Act. If we fail to reach retransmission consent agreements with such broadcasters, we cannot carry their signals. This could have an adverse effect on our strategy to compete with cable and other satellite companies that provide local signals. While we have been able to reach retransmission consent agreements with most of these local network stations, from time to time, there are stations with which we have not been able to reach an agreement. We cannot be sure that we will secure these agreements or that we will secure new agreements on acceptable terms, or at all, upon the expiration of our current retransmission consent agreements, some of which are short-term.

In recent years, the rates we are charged for retransmitting local channels have been increasing substantially and may exceed our ability to increase our prices to our customers, which could have a material adverse effect on our business, financial condition, and results of operations. The broadcast stations' demands for higher rates have resulted in more frequent negotiating impasses and programming interruptions. During these programming interruptions, our subscribers in the affected markets lack access to popular programming and may switch to another multichannel distributor that may be able to provide them with such programming. In addition, the national broadcasters have used their ownership of certain local broadcast stations to require us to carry additional cable programming in exchange for retransmission consent of their local broadcast stations. These requirements may place constraints on available capacity on our satellites for other programming.

The STELA Reauthorization Act of 2014 ("STELAR") prohibits television stations from coordinating or engaging in joint retransmission consent negotiations with any other local television stations, unless the stations are "directly or indirectly under common de jure control," expanding a previous FCC ruling prohibiting joint negotiations only among the top four stations in a market. In addition, STELAR prohibits a local television station from limiting an MVPD's ability to carry other television signals that have been deemed by the FCC to be "significantly viewed" or to carry any other television signal the MVPD is otherwise entitled to carry under the Communications Act, unless such stations are "directly or indirectly under common de jure control" pursuant to FCC regulations. We cannot predict if these restrictions on broadcasters will result in more effective retransmission consent negotiations.

Early Termination Fees. In December 2023, the FCC released a Notice of Proposed Rulemaking seeking comment on proposals that would prohibit pay-TV providers from imposing early termination fees on consumers, and from practices that require customers who cancel service mid-billing cycle to pay for a complete cycle. If adopted, such prohibitions could impact our pricing and packages. We cannot predict the timing or outcome of this proceeding.

Blackout Rebates. In January 2024, the FCC released a Notice of Proposed Rulemaking seeking comment on a proposal that would require MVPDs to issue rebates to subscribers during programming blackouts on both broadcast and non-broadcast networks that result from failed negotiations. If adopted, such requirements could negatively impact our carriage negotiations. We cannot predict the timing or outcome of this proceeding.

ATSC 3.0. In April 2016, the broadcast industry petitioned the FCC to authorize the use of the "Next Generation TV" broadcast television standard, ATSC 3.0. In November 2017, the FCC authorized television broadcasters to deploy the ATSC 3.0 standard on a voluntary basis. We cannot predict the effect that supporting this new standard could have on equipment costs, carriage obligations or the retransmission consent process.

Media Ownership Rules. Also in 2016, the broadcast industry petitioned the FCC to relax its media ownership rules, which, among other things, limit the number of commonly owned TV stations per market and restrict newspaper/broadcast cross-ownership and radio/TV cross-ownership. In November 2017, the FCC voted to: (i) eliminate the newspaper/broadcast cross-ownership rule; (ii) eliminate the radio/television cross-ownership rule; (iii) relax the local television ownership rules to eliminate certain restrictions and modify others; and (iv) eliminate the attribution rule for television joint-sales agreements (collectively, the "2017 Order"). Additionally, in December 2017, the FCC initiated a rulemaking proceeding seeking comment on changes to the national television multiple-ownership rule, including changes that could relax or eliminate the current limits that prevent entities from owning or controlling television stations that, in the aggregate, reach more than 39 percent of the television households in the country. If the FCC were to relax or eliminate some or all of the national television multiple-ownership rule, it could increase the negotiating leverage that broadcasters hold in retransmission consent negotiations.

In December 2018, the FCC initiated a rulemaking proceeding to commence its periodic review of media ownership rules. In 2019, the U.S. Court of Appeals for the Third Circuit vacated the 2017 Order. Pursuant to this decision in Prometheus Radio Project v. FCC, on December 20, 2019, the FCC amended its rules to reverse the 2017 Order and reinstate the rules as they existed prior to the 2017 Order. The FCC, though, petitioned for a writ of certiorari with the Supreme Court of the United States (the "Supreme Court") to reverse the Third Circuit's decision. On April 1, 2021, in FCC v. Prometheus Radio Project, the Supreme Court reversed the Third Circuit, finding that "the FCC's analysis was reasonable and reasonably explained for purposes of the APA's deferential arbitrary and capricious standard." On June 4, 2021, the FCC released an Order reinstating the rule changes from the 2017 Order.

In December 2023, the FCC concluded its 2018 quadrennial proceeding and issued an Order that, among other things, retained the FCC's general prohibition on a broadcaster owning two or more of the top four stations in a market and added language intended to prevent broadcasters from circumventing this rule by acquiring a top four affiliation and placing it on a multicast or low power television signal on a going forward basis. We cannot predict whether there will be additional challenges to this rule or whether the FCC may address media ownership issues going forward, either through the imposition of new rules or the relaxation of remaining ownership restrictions.

Digital HD Carry-One, Carry-All Requirement. To provide any full-power local broadcast signal in any market, we are required to retransmit all qualifying broadcast signals in that market ("carry-one, carry-all"), including the carriage of full-power broadcasters' HD signals in markets in which we elect to provide local channels in HD. The carriage of additional HD signals on our DISH TV services could cause us to experience significant capacity constraints and prevent us from carrying additional popular national channels and/or carrying those national channels in HD.

Distant Signals. Pursuant to STELA, we obtained a waiver of a court injunction that previously prevented us from retransmitting certain distant network signals under a statutory copyright license. Because of that waiver, we may provide distant network signals to eligible subscribers. To qualify for that waiver, we are required to provide local service in all 210 local markets in the United States on an ongoing basis. This condition poses a significant strain on our capacity. Moreover, we may lose that waiver if we are found to have failed to provide local service in any of the 210 local markets. If we lose the waiver, the injunction could be reinstated. Furthermore, depending on the severity of the failure, we may also be subject to other sanctions, which may include, among other things, damages.

Cable Act and Program Access. We purchase a large percentage of our programming from cable-affiliated programmers. Pursuant to the Cable Act, cable providers had been prohibited from entering into exclusive contracts with cable-affiliated programmers. On October 5, 2012, the FCC allowed this prohibition to expire. As a result of the expiration of this prohibition on exclusivity, we may be limited in our ability to obtain access on nondiscriminatory terms, or at all, to programming from programmers that are affiliated with cable system operators. In addition, any other changes in the Cable Act, and/or the FCC's rules that implement the Cable Act, that currently limit the ability of cable-affiliated programmers to discriminate against competing businesses such as ours, could adversely affect our ability to acquire cable-affiliated programming at all or to acquire programming on nondiscriminatory terms. In addition, affiliates of certain cable providers have denied us access to sports programming that they supply to their cable systems terrestrially, rather than by satellite. The FCC has held that new denials of such service are unfair if they have the purpose or effect of significantly hindering us from providing programming to consumers. However, we cannot be sure that we can prevail in a complaint related to such programming and gain access to it. Our continuing failure to access such programming could materially and adversely affect our ability to compete in regions serviced by these cable providers.

Open Internet (also known as "Net Neutrality"). In 2015, the FCC adopted Open Internet rules, which applied to both fixed and mobile broadband access providers and prohibited them, among other things, from blocking or throttling traffic, from paid prioritization, and from unreasonably interfering with, or disadvantaging, consumers' or content providers' access to the Internet. In addition, because the FCC reclassified broadband access providers as common carriers, these providers were subject to the general common carrier requirements of reasonableness and nondiscrimination. The rules were affirmed by a panel of the U.S. Court of Appeals for the D.C. Circuit. A number of broadband access providers and their associations have filed a petition for certiorari with the United States Supreme Court. In December 2017, the FCC reversed course and voted to reclassify broadband access providers as information service providers, instead of common carriers. The FCC also voted to eliminate the majority of the Open Internet rules, leaving only certain ISP transparency requirements in place. In October 2019, the U.S. Court of Appeals for the D.C. Circuit upheld the FCC's authority to eliminate certain Open Internet protections, while vacating the FCC's attempt to preempt state or local Open Internet protections and remanding on three other issues. In October 2023, the FCC adopted a Notice of Proposed Rulemaking seeking comment on rules to reestablish the FCC's authority over broadband internet access services. We cannot predict the timing or outcome of this proceeding or the impact of any new rules on DISH's wireless offerings.

To the extent that network operators implement usage-based pricing, including, but not limited to, meaningful bandwidth caps, or otherwise try to monetize access to their networks by data providers, we could incur greater operating expenses and our Pay TV subscriber count could be negatively impacted. Furthermore, to the extent network operators create tiers of Internet access service and either charge us for or prohibit us from being available through these tiers, our Pay TV business could be negatively impacted. We cannot predict with any certainty the impact to our Pay TV business resulting from changes in how network operators handle and charge for access to data that travels across their networks.

Definition of MVPD. In December 2014, the FCC issued a Notice of Proposed Rulemaking regarding the definition of an MVPD. Among other things, the FCC is considering whether the definition of an MVPD should apply to Internet-based streaming services, thus making such services subject to the same regulations as an MVPD. The FCC is also considering the appropriate treatment of purely Internet-based linear video programming services that cable operators and DBS providers offer in addition to their traditional video services. We cannot predict the timing or outcome of this rulemaking or other related rulemaking proceedings.

Federal Trade Commission. The Federal Trade Commission ("FTC") and other federal agencies also have jurisdiction over some consumer protection and elimination and prevention of anticompetitive business practices.

Telecommunications Regulation. Many of the services we provide are also subject to FCC regulation as telecommunications services. For certain services in the U.S., we are required to contribute fees, computed as a percentage of our revenue from telecommunications services to the Universal Service Fund ("USF") to support mechanisms that subsidize the provision of services to low-income consumers, high-cost areas, schools, libraries and rural health care providers. Current FCC rules permit us to pass this USF contribution through to our customers. The FCC also requires broadband internet access and internet telephony service providers to comply with the requirements of the Federal Communications Assistance for Law Enforcement Act, which generally requires telecommunications carriers to ensure that law enforcement agencies are able to conduct lawfully-authorized surveillance of users of their services. In addition, as a provider of interconnected voice over internet protocol services, we are required to abide by a number of rules related to telephony service, including rules dealing with the protection of customer information and the processing of emergency calls.

State and Local Regulation

We are also regulated by state and local authorities. While the FCC has preempted many state and local regulations that impair the installation and use of towers for wireless operations and VSAT and other consumer satellite dishes, our business nonetheless may be subject to state and local regulation, including, among others, zoning regulations that affect the ability to install consumer satellite antennas or build out wireless telecommunications networks. In addition, in order to obtain universal service funding, we are subject to being an eligible telecommunications carrier in all 50 states.

International Regulation

We are subject to regulation by the International Telecommunication Union ("ITU"). The orbital location and frequencies for certain of our satellites are subject to the frequency registration and coordination process of the ITU. The ITU Radio Regulations define the international rules, regulations, and rights for a satellite and associated earth stations to use specific radio frequencies at a specific orbital location. These rules, which include deadlines for the bringing of satellite networks into use, differ depending on the type of service to be provided and the frequencies to be used by the satellite. On our behalf, various countries have made and may in the future make additional filings for the frequency assignments at particular orbital locations that are used or to be used by our current satellite networks and potential future satellite networks we may build or acquire.

In the event the international coordination process that is triggered by ITU filings under applicable rules is not successfully completed, or that the requests for modification of the broadcast satellite services plan regarding the allocation of orbital locations and frequencies are not granted by the ITU, we will have to operate the applicable satellite(s) on a non-interference basis, which could have an adverse impact on our business operations. If we cannot do so, we may have to cease operating such satellite(s) at the affected orbital locations. We cannot be sure of the successful outcome of these ITU coordination processes. We make commercially reasonable efforts to cooperate with the filing nation in the preparation of ITU filings, coordination of our operations in accordance with the relevant ITU Radio Regulations and responses to relevant ITU inquiries.

Certain of our satellite services also must conform to the ITU service plans for Region 2 (which includes the United States). If any of our operations are not consistent with this plan, the ITU will only provide authorization on a non-interference basis pending successful modification of the plan or the agreement of all affected administrations to the non-conforming operations. Certain of our satellites are not presently entitled to any interference protection from other satellites that are in conformance with the plan. Accordingly, unless and until the ITU modifies its service plans to include the technical parameters of our non-conforming operations, our non-conforming satellites, along with those of other non-conforming satellite operators, must not cause harmful electrical interference with other assignments that are in conformance with the ITU service plans.

The ITU also endeavors to standardize frequency allocations globally, which has led it to work on standards for terrestrial services as well as satellite operations. Combined with the work of international industry-led standards bodies such as 3GPP, these efforts could have a significant effect on the development of our Wireless services.

Foreign Administrations' Jurisdiction Over Satellite and Terrestrial Operations. Certain of our satellites and earth stations are licensed in foreign jurisdictions. We also have terrestrial authorizations in foreign jurisdictions. In order to provide service to a foreign location from our U.S. satellites, we are required to obtain approvals from the FCC and foreign administrative agencies. The laws and regulations addressing access to satellite and terrestrial systems vary from country to country. In most countries, a license is required to provide our services and to operate satellite systems and earth stations.

Such licenses may impose certain conditions, including implementation and operation of the satellite system in a manner consistent with certain milestones (such as for contracting, satellite design, construction, launch and implementation of service), that the satellite or its launch be procured through a national entity, that the satellite control center be located in national territory, that a license be obtained prior to launching or operating the satellite, or that a license be obtained before interconnecting with the local switched telephone network and we may be subject to penalties or fines for failing to meet such conditions. Additionally, some countries may have restrictions on the services we provide and how we provide them and/or may limit the rates that can be charged for the services we provide or impose other service terms or restrictions. Furthermore, foreign countries in which we currently, or may in the future, operate may not authorize us access to all of the spectrum that we need to provide service in a particular country.

Registration in the UN Registry of Space Objects

The United States and other jurisdictions in which we license satellites are parties to the United Nations ("UN") Convention on the Registration of Objects Launched into Outer Space ("The UN Convention"). The UN Convention requires a satellite's launching state to register the satellite as a space object with an UN Registry of Space Objects. The act of registration carries liability for the registering country in the event that the satellite causes third-party damage. Administrations may place certain requirements on satellite licensees in order to procure the necessary launch or operational authorizations that accompany registration of the satellite. In some jurisdictions, these authorizations are separate and distinct, with unique requirements, from the authorization to use a set of frequencies to provide satellite services. There is no guarantee that we will be able to procure such authorizations even if we already possess a frequency authorization.

Export Control and Foreign Corrupt Practices Act

In the operation of our business, we must comply with all applicable export control and trade sanctions laws and regulations of the U.S. and other countries. Applicable U.S. laws and regulations include the Arms Export Control Act, the International Traffic in Arms Regulations ("ITAR"), the Export Administration Regulations ("EAR") and the trade sanctions laws and regulations administered by the U.S. Department of the Treasury's Office of Foreign Assets Control ("OFAC").

The export of certain hardware, technical data, and services relating to satellites and the supply of certain ground control equipment, technical data and services to non-U.S. persons or to destinations outside the U.S. is regulated by the U.S. Department of Commerce's Bureau of Industry and Security ("BIS") under the EAR. Among other things, we are required to obtain import and export licenses from the United States government to receive and deliver certain components of direct-to-home satellite television systems. In addition, BIS regulates our export of satellite communications network equipment to non-U.S. persons or to destinations outside of the U.S. The export of other items is regulated by the U.S. Department of State's Directorate of Defense Trade Controls under the ITAR and are subject to strict export control and prior approval requirements government (including prohibitions on the sharing of certain satellite-related goods and services with China). In addition, we cannot provide certain equipment or services to certain countries subject to U.S. trade sanctions unless we first obtain the necessary authorizations from OFAC. We are also subject to the Foreign Corrupt Practices Act and similar anti-bribery laws in other jurisdictions that generally prohibit companies and their intermediaries from making improper payments or giving or promising to give anything of value to foreign government officials and other individuals for the purpose of obtaining or retaining business or gaining a competitive advantage.

Non-U.S. Telecommunications Regulation

Many of the services we provide are also subject to the regulation of other countries as telecommunications services. For certain services, we may be required to contribute fees to a universal service or other fund to support mechanisms that subsidize the provision of services to designated groups. Many countries also impose requirements on telecommunications carriers to ensure that law enforcement agencies are able to conduct lawfully-authorized surveillance of users of their services. In addition, we are subject to a number of other rules, including rules related to telephony service such as the protection of customer information and processing of emergency calls.

Regulations Governing our Wireless Operations

The FCC regulates many aspects of our Retail Wireless and 5G Network Deployment operations. Generally, the FCC has jurisdiction over the construction, operation, acquisition and transfer of wireless communications systems. All wireless services require use of radio frequency spectrum, the assignment and distribution of which is subject to FCC oversight. The FCC can also determine what services can be offered and how they can be offered over certain frequency bands. For more information regarding our FCC Licenses, see discussion above and Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K.

Additionally, the FCC and the Federal Aviation Administration regulate the siting, lighting and construction of transmitter towers and antennae. Tower siting and construction are also subject to, among other things, state and local zoning, as well as federal statutes regarding environmental and historic preservation. The future costs to comply with all relevant regulations are to some extent unknown and changes to regulations, or the applicability of regulations, could result in higher operating and capital expenses, or reduced revenues in the future. Furthermore, the FCC has also imposed certain specific mandates on wireless carriers, including, but not limited to, construction and geographic coverage requirements, technical operating standards, provision of enhanced 911 services, roaming obligations and requirements for wireless tower and antenna facilities.

The FTC and other federal agencies also have jurisdiction over some consumer protection and elimination and prevention of anticompetitive business practices with respect to the provision of non-common carrier services.

Meanwhile, our 5G Network Deployment will involve significant deployment of certain equipment and therefore increase the need for local permitting processes that allow for the placement of equipment on reasonable timelines and terms. While the Communications Act generally preempts state and local governments from regulating the entry of, or the rates charged by, wireless communications services providers, certain state and local governments regulate other terms and conditions of wireless service, including, but not limited to, billing, termination of service arrangements and the imposition of early termination fees, advertising, network outages, the use of devices while driving, zoning and land use. The Communications Act also does not prohibit states from regulating the other “terms and conditions” of wireless service. For example, some states attempt to regulate wireless customer billing matters and impose reporting requirements. Several states also have laws or regulations that address safety issues (e.g., use of wireless handsets while driving) and taxation matters. In addition, wireless tower and antenna facilities are often subject to state and local zoning and land use regulation, and securing approvals for new or modified facilities is often a lengthy and expensive process.

ENVIRONMENTAL REGULATIONS

We are subject to the requirements of federal, state, local and foreign environmental and occupational safety and health laws and regulations. These include laws regulating air emissions, waste-water discharge and waste management, most significantly the Resource Conservation and Recovery Act and the Emergency Planning and Community Right-to-Know Act (“EPCRA”). Under the Resource Conservation and Recovery Act, our Hughes segment is considered a small quantity generator.

As required by the EPCRA, we file annual reports with regulatory agencies covering four areas: Emergency Planning, Emergency Release, Hazardous Chemical Storage and Toxic Chemical Release Inventory. We maintain small quantities of hazardous materials on our premises and, therefore, have relatively modest reporting requirements under the EPCRA. We are also subject to the requirements of other environmental and occupational safety and health laws and regulations. Additionally, we review the Superfund Amendments and Reauthorization Act Title III regulatory requirements and annually report quantities of onsite material storage using Tier II, state DEQ (Department of Environmental Quality) reporting systems.

Our environmental compliance costs, capital and other expenditures to date have not been material, and we do not expect them to be material in 2024 or 2025. However, environmental requirements are complex, change frequently and have become more stringent over time. Accordingly, we cannot provide assurance that these requirements will not change or become more stringent in the future in a manner that could have a material adverse effect on our business and/or environmental compliance costs, capital or other expenditures.

PATENTS AND OTHER INTELLECTUAL PROPERTY

Many entities, including, but not limited to, some of our competitors, have or may in the future obtain patents and other intellectual property rights that cover or affect products or services that we offer or that we may offer in the future. In general, if a court determines that one or more of our products or services infringe intellectual property rights held by others, we may be required to cease developing or marketing those products or services, to obtain licenses from the holders of the intellectual property rights at a material cost, or to redesign those products or services in such a way as to avoid infringing any patent claims. If those intellectual property rights are held by a competitor, we may be unable to obtain the intellectual property rights at any price, which could adversely affect our competitive position.

We may not be aware of all intellectual property rights that our products or services may potentially infringe. In addition, patent applications in the United States are confidential until the Patent and Trademark Office either publishes the application or issues a patent (whichever arises first) and, accordingly, our products may infringe claims contained in pending patent applications of which we are not aware. Further, the process of determining definitively whether a claim of infringement is valid often involves expensive and protracted litigation, even if we are ultimately successful on the merits.

We cannot estimate the extent to which we may be required in the future to obtain intellectual property licenses or the availability and cost of any such licenses. Those costs, and their impact on our results of operations, could be material. Damages in patent infringement cases can be substantial, and in certain circumstances can be trebled. To the extent that we are required to pay unanticipated royalties to third parties, these increased costs of doing business could negatively affect our liquidity and operating results. We are currently defending multiple patent infringement actions. We cannot be certain the courts will conclude these companies do not own the rights they claim, that our products do not infringe on these rights and/or that these rights are not valid. Furthermore, we cannot be certain that we would be able to obtain licenses from these persons on commercially reasonable terms or, if we were unable to obtain such licenses, that we would be able to redesign our products to avoid infringement.

SEGMENT REPORTING DATA AND GEOGRAPHIC AREA DATA

For segment reporting data and principal geographic area data for 2023, 2022 and 2021, see Note 16 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K.

HUMAN CAPITAL

We believe that our future success will depend to a significant extent upon the performance of Charles W. Ergen, our Chairman, and certain other executives. The loss of Mr. Ergen or of certain other key executives could have a material adverse effect on our business, financial condition and results of operations. Although all of our executives have executed agreements with certain non-competition restrictions that apply if they leave us, we generally do not have employment agreements with them.

We believe that our Wireless business, including our ability to complete our 5G Network Deployment, is dependent on our ability to identify, hire, develop, motivate, and retain a team of highly skilled personnel with knowledge of the wireless industry. Our Wireless business will be adversely affected if we fail to effectively identify, hire, develop, motivate, and retain highly skilled personnel with knowledge of the wireless industry.

We had approximately 15,300 employees at December 31, 2023, majority of whom were located in the United States and approximately 600 internationally. We generally consider relations with our employees to be good. Approximately 35 employees in one of our field offices have voted to have a union represent them in their employment relations with DISH Network. In June of 2022, we signed a collective bargaining agreement with the union. The agreement is effective from February 21, 2022 to February 20, 2024. We began collective bargaining regarding a potential new contract on February 15, 2024. Until any agreement is reached, the terms of the original collective bargaining agreement will remain in force. The current number of union employees at the site is 5. In addition, approximately 400 of our employees located in Italy and Brazil are represented by a union. Our mission is to be a global connectivity provider for people, enterprises and things.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Exchange Act and accordingly file our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and other information with the SEC. As an electronic filer, our public filings are also maintained on the SEC's Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The address of that website is http://www.sec.gov.

WEBSITE ACCESS

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act also may be accessed free of charge through our website as soon as reasonably practicable after we have electronically filed such material with, or furnished it to, the SEC. The address of that website is https://ir.echostar.com/.

We have adopted a written code of ethics that applies to all of our directors, officers and employees, including our principal executive officer and senior financial officers, in accordance with Section 406 of the Sarbanes-Oxley Act of 2002 and the rules of the SEC promulgated thereunder. Our code of ethics is available on our corporate website at https://ir.echostar.com/. In the event that we make changes in, or provide waivers of, the provisions of this code of ethics that the SEC requires us to disclose, we intend to disclose these events on our website.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

(furnished in accordance with Item 401(b) of Regulation S-K, pursuant to General Instruction G(3) of Form 10-K)

The following table and information below sets forth the name, age and position with EchoStar of each of our executive officers, the period during which each executive officer has served as such, and each executive officer's business experience during the past five years:

Name	Age	Position
Charles W. Ergen	70	Chairman
Hamid Akhavan	62	President, Chief Executive Officer
Paul Gaske	70	Chief Operating Officer, Hughes
Dean A. Manson	57	Chief Legal Officer and Secretary
Paul W. Orban	55	Executive Vice President and Chief Financial Officer, DISH
Gary Schanman	53	Executive Vice President and Group President, Video Services
John W. Swieringa	46	President, Technology and Chief Operating Officer

Charles W. Ergen. Mr. Ergen has served as our executive Chairman since November 2009 and Chairman of the Board of Directors since our formation in 2007. Mr. Ergen served as our Chief Executive Officer from our formation in 2007 until November 2009. Mr. Ergen serves as executive Chairman and has been Chairman of the Board of Directors of DISH Network Corporation ("DISH") since its formation and, during the past five years, has held executive officer and director positions with DISH and its subsidiaries (together with DISH, "Dish Network") most recently serving as the Chief Executive Officer of DISH from March 2015 to December 2017.

Hamid Akhavan. Mr. Akhavan has served as our Chief Executive Officer and President since April 2022. Following the announcement of the Amended Merger Agreement, Mr. Akhavan served as the DISH Network's Chief Executive Officer from November 2023 to December 2023. Prior to joining EchoStar, Mr. Akhavan has accumulated extensive leadership experience at major telecommunications and technology companies, including Chief Executive Officer of Unify, Inc, and Chief Executive Officer of T-Mobile International, where he also served as a member of the Board of Management of Deutsche Telekom. In recent years, Akhavan has been active in private equity and serving on the board of directors of several public and private companies.

Paul Gaske. Mr. Gaske became Chief Operating Officer, Hughes effective January 1, 2023, reporting to the Company's Chief Executive Officer. Prior to becoming the Chief Operating Officer, Mr. Gaske was the Executive President and General Manager of the North American Division of Hughes Network Systems, LLC since 1999. Mr. Gaske also oversees Hughes manufacturing.

Dean A. Manson. Mr. Manson has served as our Chief Legal Officer and Secretary since November 2011 and is responsible for all our legal, government affairs and corporate information security. Mr. Manson joined our subsidiary Hughes Network Systems, LLC in 2000 and was appointed its General Counsel in 2004. He was previously with the law firm of Milbank, Tweed, Hadley & McCloy LLP, where he focused on international project finance and corporate transactions.

Paul W. Orban. Mr. Orban has served as Executive Vice President and Chief Financial Officer, DISH since December 2023 and is responsible for all aspects of DISH Network's finance, accounting, tax, treasury, internal audit and supply chain departments. Mr. Orban has served as Executive Vice President and Chief Financial Officer of DISH Network since July 2019 and has had responsibility for all aspects of DISH Network's finance, accounting, tax, treasury, internal audit and supply chain departments. Mr. Orban served as Senior Vice President and Chief Accounting Officer from December 2015 to July 2019, Senior Vice President and Corporate Controller from September 2006 to December 2015 and as Vice President and Corporate Controller from September 2003 to September 2006. He also served as EchoStar's Senior Vice President and Corporate Controller from 2008 to 2012 pursuant to a management services agreement between DISH Network and EchoStar. Since joining DISH Network in 1996, Mr. Orban has held various other positions of increasing responsibility in our accounting department. Prior to DISH Network, Mr. Orban was an auditor with Arthur Andersen LLP.

Gary Schanman. Mr. Schanman has served as Executive Vice President and Group President, Video Services since December 2023 and is responsible for the DISH TV and SLING TV businesses, including product, media sales, marketing and programming. Mr. Schanman previously served as Executive Vice President and Group President, Video Services for DISH Network since July 2023. Mr. Schanman previously served as Executive Vice President and Group President, SLING TV since April 2022 and has had responsibility for all aspects of the SLING TV business. Prior to EchoStar, Mr. Schanman was the Founder and President of GB Monday, while also acting as Chief Product and Technology Officer for Common Sense Networks and its kids streaming service, Sensical from July 2020 to April 2022. Prior to that, from March 2014 to March 2020, he served as Senior Vice President of Spectrum Video Products at Charter Communications.

John W. Swieringa. Mr. Swieringa has served as President of Technology and Chief Operating Officer since December 2023 and is responsible for all the technology and operational aspects of our business. Mr. Swieringa previously served as the President of Technology and Chief Operating Officer of DISH Network since August 2023. Mr. Swieringa previously served as President and Chief Operating Officer of DISH Network's Wireless business segment from January 2022 to August 2023 and has had responsibility for all operational aspects of DISH Network's Wireless business segment. Mr. Swieringa previously served as Executive Vice President and Chief Operating Officer of DISH Network since December 2017 and as Group President, Retail Wireless since July 2020 and has had responsibility for all aspects of DISH Network's Retail Wireless segment. Mr. Swieringa previously served as Executive Vice President, Operations from December 2015 to December 2017, as Senior Vice President and Chief Information Officer from March 2014 to December 2015 and as Vice President of Information Technology Customer Applications from March 2010 to March 2014. Mr. Swieringa joined DISH Network in December 2007 serving in our finance department.

There are no arrangements or understandings between any executive officer and any other person pursuant to which any executive officer was selected as such. Pursuant to the Bylaws of EchoStar, executive officers serve at the discretion of the Board of Directors.

Item 1A. RISK FACTORS

The risks and uncertainties described below are not the only ones facing us. If any of the following events occur or evolve in a way different than expected, our business, financial condition, results of operation could be materially and adversely affected.

Risks Related to the Integration

Although we expect that the Merger will result in synergies and other benefits, those synergies and benefits may not be realized in the amounts anticipated, or may not be realized within the anticipated timeframe, or at all, and risks associated with the foregoing may also result from any extended delay in the Integration of the companies.

Our ability to realize the anticipated benefits of the Merger will depend, to a large extent, on our ability to integrate our and DISH Network's business in a manner that facilitates growth opportunities and achieves the anticipated benefits. In addition, some of the anticipated synergies are not expected to occur for a significant time period following the completion of the Merger and will require substantial capital expenditures to achieve. There can be no guarantee we will achieve any of these benefits on the anticipated timeframe or at all.

The combination of two separate companies is complex, costly and time-consuming and may require significant management attention and resources which may divert attention from our business and operations. The failure to meet the challenges involved in combining the two companies and to realize the anticipated benefits of the Merger could, among other things, cause an interruption of, or a loss of momentum in, our activities and could adversely affect our results of operations. The overall combination of the two companies may also result in, among other things, material unanticipated problems, expenses, liabilities, competitive responses and loss of customer and other business relationships. The difficulties of combining our operations include, among others:

- diversion of management and employee attention to Integration matters;
- difficulties in integrating operations and systems, including, but not limited to, communications systems, administrative and information technology infrastructure, financial reporting and internal control systems;
- challenges in conforming standards, controls, procedures and accounting and other policies, business cultures and compensation structures between the two companies;
- difficulties in integrating employees and teams of the respective businesses and attracting and retaining key personnel;
- challenges in retaining and obtaining customers, suppliers and other commercial relationships;
- difficulties in managing the expanded operations of a larger and more complex company; and
- potential unknown liabilities, adverse consequences and unforeseen increased expenses associated with the Integration.

Many of these factors are outside of our control and any of them could result in lower revenues, higher costs and diversion of management time and energy, which could materially impact our business, financial condition and results of operations. In addition, even if the operations of the companies are integrated successfully, the full benefits of the Merger may not be realized, including, among others, the synergies, cost savings or sales or growth opportunities that are expected. These benefits may not be achieved within the anticipated time frame or at all. As a result, it cannot be assured that the Integration will result in the realization of the full benefits expected from the Merger within the anticipated time frames, or at all.

The market price for shares of our common stock may be affected by factors different from, or in addition to, those that historically affected the market prices of shares of DISH Network Class A Common Stock and EchoStar Class A Common Stock.

Upon consummation of the Merger, DISH Network Class A Stockholders became holders of EchoStar Class A Common Stock. The businesses of DISH Network and its subsidiaries are different from those of EchoStar and its subsidiaries. Accordingly, after the consummation of the Merger, our results of operations are affected by some factors that are different from those that historically affected the results of operations of EchoStar and/or DISH Network. The results of operations of each company may also be affected by factors different from those that currently affect or have historically affected either company.

Competition and Economic Risks

We face intense and increasing competition from providers of video, broadband and/or wireless services, which may require us to further increase subscriber acquisition and retention spending or accept lower subscriber activations and higher subscriber churn.

Our Pay-TV business faces substantial competition from established pay-TV providers and broadband service providers and increasing competition from companies providing/facilitating the delivery of video content via the Internet to computers, televisions, and other streaming and mobile devices, including, but not limited to, wireless service providers. In recent years, the traditional pay-TV industry has matured, and industry consolidation and convergence have created competitors with greater scale and multiple product/service offerings. Some of these services charge nominal or no fees for access to their content, which could adversely affect demand for our Pay-TV services. Moreover, new technologies have been, and will likely continue to be, developed that further increase the number of competitors we face with respect to video services, including, but not limited to, competition from piracy-based video offerings. These developments, among others, have contributed to intense and increasing competition, which we expect to continue.

We face increasing competition from content providers and other companies who distribute video directly to consumers over the Internet. These content providers and other companies, as well as traditional satellite television providers, cable companies and large telecommunication companies, are rapidly increasing their Internet-based video offerings. See *"Item 1. Business – Overview – Competition"* and "*Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations – Trends in our Pay-TV Segment*" in this Annual Report on Form 10-K for further information.

Mergers and acquisitions, joint ventures and alliances among cable television providers, telecommunications companies, programming providers and others may result in, among other things, greater scale and financial leverage and increase the availability of offerings from providers capable of bundling video, broadband and/or wireless services in competition with our services, and may exacerbate the risks described herein. Such providers may be able to, among other things, utilize their increased leverage over third-party content owners and programmers to withhold online rights from us and reduce the price they pay for programming at the expense of other MVPDs, including us; thwart our ability to compete in the wireless market, by, among other things, refuse to enter into data roaming agreements; underutilize key orbital spectrum resources that could be more efficiently used by us; foreclose or degrade our online video offerings at various points in the broadband pipe; and impose data caps on consumers who access our online video offerings. See "*Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations – Trends in our Pay-TV Segment – Programming*" in this Annual Report on Form 10-K for further information.

We believe that the availability and extent of programming, including, but not limited to, unique programming services such as foreign language, sports programming and original content, and other value-added services such as access to video via mobile devices, continue to be significant factors in consumers' choice among pay-TV providers. Other pay-TV providers may have more successfully marketed and promoted their programming packages and value-added services and may also be better equipped and have greater resources to increase their programming offerings and value-added services to respond to increasing consumer demand. We may be required to make substantial additional investments in infrastructure to respond to competitive pressure to deliver enhanced programming and other value-added services, and there can be no assurance that we will be able to compete effectively with offerings from other pay-TV providers.

Furthermore, this increasingly competitive environment may require us to increase subscriber acquisition and retention spending or accept lower subscriber activations and higher subscriber churn. Increasingly, we must seek to attract a greater proportion of new subscribers from our competitors' existing subscriber bases rather than from first-time purchasers of pay-TV services. In addition, because other pay-TV providers may be seeking to attract a greater proportion of their new subscribers from our existing subscriber base, we may be required to increase retention spending and/or provide greater discounts or credits to acquire and retain subscribers who may spend less on our services. Our SLING TV subscribers on average purchase lower-priced programming services than do DISH TV subscribers. Accordingly, an increase in SLING TV subscribers has a negative impact on our Pay-TV average monthly revenue per subscriber ("Pay-TV ARPU").

If our Pay-TV ARPU decreases or does not increase commensurate with increases in programming or other costs, our margins may be reduced and the long-term value of a subscriber would then decrease and could have a material adverse effect on our business, results of operations and financial condition.

In addition, as a result of this increased competitive environment and the maturation of the pay-TV industry, future growth opportunities of our DISH TV business may be limited and our margins may be reduced, which could have a material adverse effect on our business, results of operations and financial condition. Our gross new DISH TV subscriber activations continue to be negatively impacted by stricter subscriber acquisition policies (including, but not limited to, a focus on attaining higher quality subscribers) and increased competitive pressures, including, but not limited to, aggressive marketing, more aggressive retention efforts, bundled discount offers combining broadband, video and/or wireless services and other discounted promotional offers. In addition, we face increased competitive pressures from content providers and other companies who distribute video directly to consumers over the Internet. These content providers and other companies, as well as traditional satellite television providers, cable companies and large telecommunication companies, are rapidly increasing their Internet-based video offerings and direct-to-consumer exclusive and non-exclusive content. There can be no assurance that our gross new DISH TV subscriber activations, net DISH TV subscriber additions, and DISH TV churn rate will not continue to be negatively impacted and that the pace of such negative impact will not accelerate. In the event that our DISH TV subscriber base continues to decline or such decline accelerates, it could have a material adverse effect on our business, results of operations and financial condition.

Changing consumer behavior and new technologies in our Pay-TV business may reduce our subscriber activations and may cause our subscribers to purchase fewer services from us or to cancel our services altogether, resulting in less revenue to us.

New technologies, products and services are driving rapid changes in consumer behavior as consumers seek more control over when, where and how they consume content and access communication services. In particular, through technological advancements and with the large increase in the number of consumers with broadband service, a significant amount of video content has become available through online content providers for users to stream and view on their personal computers, televisions, phones, tablets, video game consoles and other devices, in some cases without a fee required to access the content. While our subscribers can use their traditional video subscription to access mobile programming, an increasing number of subscribers are also using mobile devices as the sole means of viewing video, and an increasing number of non-traditional video providers is developing content and technologies to satisfy that demand. For example, these technological advancements, changes in consumer behavior, and the increasing number of choices available to consumers regarding the means by which consumers obtain video content may cause DISH TV subscribers to disconnect our services ("cord cutting"), downgrade to smaller, less expensive programming packages ("cord shaving") or elect to purchase through online content providers a certain portion of the services that they would have historically purchased from us.

These technological advancements and changes in consumer behavior and/or our failure to effectively anticipate or adapt to such changes, could reduce our gross new Pay-TV subscriber activations and increase our subscriber churn rate and could have a material adverse effect on our business, results of operations and financial condition.

New technologies could also create new competitors for us. For instance, we face increasing consumer demand for the delivery of digital video services via the Internet. We expect to continue to face increased competition from companies who use the Internet to deliver digital video services as the speed and quality of broadband and wireless networks continue to improve.

We face certain risks competing in the wireless services industry and operating a facilities-based wireless services business.

As a result of certain acquisitions we have entered the retail wireless business. We have made substantial investments to acquire certain wireless spectrum licenses. We plan to commercialize our Wireless spectrum licenses through the completion of our 5G Network Deployment. A Wireless services business presents certain risks. Any of the following risks, among others, may have a material adverse effect on our future business, results of operations and financial condition.

- ***The wireless services industry is dominated by incumbents***. We have limited experience in the wireless services industry, which is an industry with increasing subscriber demands for data services that require increasing capital resources to maintain a robust network. The wireless services industry has incumbent and established competitors such as Verizon, AT&T and T-Mobile with substantial market share. These companies have, among other things, greater financial, marketing and other resources than us, and have existing cost and operational advantages that we lack. Market saturation is expected to continue to cause subscriber growth rates in the wireless services industry to moderate in comparison to historical growth rates, leading to increased competition for subscribers. As the industry matures, competitors increasingly must seek to attract a greater proportion of new subscribers from each other's existing subscriber bases rather than from first-time purchasers of wireless services. Furthermore, the cost of attracting a new subscriber is generally higher than the cost associated with retaining an existing subscriber. In addition, we face increasing competition from wireless telecommunications providers who offer mobile video offerings or partner with others to create bundled offerings. Wireless mobile video offerings have become more prevalent in the marketplace as wireless telecommunications providers have expanded the fifth generation of wireless communications. As previously noted, mergers and acquisitions, joint ventures and alliances among cable television providers, telecommunications companies, programming providers and others may result in, among other things, greater scale and financial leverage and increase the availability of offerings from providers capable of bundling video, broadband and/or wireless services in competition with our services. Such companies may be able to, among other things, pressure third-party content owners and programmers to withhold online rights from us; utilize their increased leverage over third-party content owners and programmers to reduce the price they pay for programming at the expense of other MVPDs, including us; thwart our ability to compete in the wireless market, by, among other things, refusing to enter into data roaming agreements with us; foreclose or degrade our online video offerings at various points in the broadband pipe; and impose data caps on consumers who access our online video offerings. See *"Item 1. Business – Overview – Business Strategy – Retail Wireless"* and *"Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations – Wireless – Retail Wireless"* in this Annual Report on Form 10-K for further information.
- ***Our ability to compete effectively in the wireless services industry is dependent on a number of factors.*** Our ability to compete effectively in the wireless services industry depends on, among other things, our network quality, capacity and coverage; the pricing of our products and services; the quality of subscriber service; our development of new and enhanced products and services; the reach and quality of our sales and distribution channels; our ability to predict and adapt to future changes in technologies and changes in consumer demands; and our capital resources. It also depends on how successfully we anticipate and respond to various competitive factors affecting the industry, including, among others, new technologies and business models, products and services that may be introduced by competitors, changes in consumer preferences, the demand for and usage of data, video and other voice and non-voice services, demographic trends, economic conditions, and discount pricing and other strategies that may be implemented by competitors. It may be difficult for us to differentiate our products and services from other competitors in the industry, which may limit our ability to attract and retain subscribers. Our success also may depend on our ability to access and deploy adequate spectrum, deploy new technologies and offer attractive products and services to subscribers. For example, we may not be able to obtain and offer certain technologies, features or services that are subject to competitor patents or other exclusive arrangements. Our success and financial results also depend on, among other factors, our ability to achieve a lower cost structure in our 5G Network Deployment and commercialization of our network. As we complete our 5G Network Deployment and transition a portion of our business to a MNO from an MVNO, our results of operations and financial performance will depend in part on our ability to offer wireless services more cost effectively than we are able to do so through the use of our current MVNO agreements.

- ***We depend on certain third parties to provide us with infrastructure and products and services***. We depend on various key suppliers and vendors to provide us, directly or through other suppliers, with infrastructure, equipment and services, such as switch and network equipment, handsets and other devices and equipment that we would need in order to operate a wireless services business and provide products and services to our subscribers. For example, handset and other device suppliers often rely on one vendor for the manufacture and supply of critical components, such as chipsets, used in their devices. If these suppliers or vendors fail to provide equipment or services on a timely basis, or at all, or fail to meet performance expectations, we may be unable to provide products and services as and when expected by our subscribers. Any difficulties experienced with these suppliers and vendors could result in additional expense and/or delays in operating our Wireless services. Our efforts involve significant expense and require strategic management decisions on, and timely implementation of, among other things, equipment choices, network deployment and management, and service offerings. In addition, these suppliers and vendors may also be subject to litigation with respect to technology on which we depend, including, but not limited to, litigation involving claims of patent infringement. In addition, our 5G Network Deployment utilizes an O-RAN architecture, which is designed to, among other things, incorporate components sourced from various third-party suppliers. Generally, these third-party suppliers do not ensure that their products will integrate with components provided by other third-party suppliers. As a result, we generally serve as the overall system integrator. Failure of these products to, among other things, effectively interoperate with one another could adversely affect our financial performance, including, but not limited to, our ability to complete our 5G Network Deployment on a cost-effective or timely basis or at all.
- ***Wireless services and our Wireless spectrum licenses are subject to government regulation.*** Wireless services and our Wireless spectrum licenses are subject to regulation by the FCC and other federal, state and local, as well as international, governmental authorities. These governmental authorities could adopt regulations or take other actions that would adversely affect our business prospects, making it more difficult and/or expensive to complete our 5G Network Deployment and to further commercialize our Wireless spectrum licenses or acquire additional licenses. The licensing, construction, operation, sale and interconnection arrangements of wireless telecommunications systems are regulated by the FCC and, depending on the jurisdiction, other federal and international, state and local regulatory agencies. In particular, the FCC imposes significant regulation on licensees of wireless spectrum with respect to, among other things, how radio spectrum is used by licensees, the nature of the services that licensees may offer and how the services may be offered, and resolution of issues of interference between spectrum bands. The FCC grants wireless licenses for terms of generally 10-12 years that are subject to renewal or revocation based on certain factors depending on the license including, among others, public interest considerations, level and quality of services and/or operations provided by the licensee, frequency and duration of any interruptions or outages of services and/or operations provided by the licensee, and the extent to which service is provided to, and/or operation is provided in, rural areas and tribal lands. There can be no assurances that our Wireless spectrum licenses will be renewed or that we will be able to obtain additional licenses. Failure to comply with FCC requirements in a given license area could result in revocation of the license for that license area. In addition, the FCC uses its transactional “spectrum screen” to identify prospective wireless transactions that may require additional competitive scrutiny. If a proposed transaction would exceed the spectrum screen threshold, the FCC undertakes a more detailed analysis of relevant market conditions in the impacted geographic areas to determine whether the transaction would reduce competition without offsetting public benefits. If a proposed spectrum acquisition exceeds the spectrum screen trigger, such additional review could extend the duration of the regulatory review process and there can be no assurance that such proposed spectrum acquisition would ultimately be completed, in whole or in part.

Our pay-TV competitors may be able to leverage their relationships with programmers to reduce their programming costs and/or offer exclusive content that will place them at a competitive advantage to us.

The cost of programming represents the largest percentage of our overall Pay-TV costs. Certain of our competitors own directly, partner with, and/or are affiliated with companies that own programming content that may enable them to obtain lower programming costs or offer exclusive programming that may be attractive to prospective subscribers. Unlike our larger cable and satellite competitors, some of which also provide internet or broadband based pay-TV services, we have not made significant investments in programming providers. In addition, certain programmers have begun offering a greater amount of their content on a direct-to-consumer basis, including, but not limited to, exclusive and non-exclusive content. As a result, it may be more difficult for us to obtain access to such programming networks on nondiscriminatory and fair terms, or at all. See "*Item 1. Business – Government Regulations – FCC Regulations Governing our Pay-TV Operations – Cable Act and Program Access*" in this Annual Report on Form 10-K for further information.

Through the MNSA and the NSA, we depend on T-Mobile and AT&T to provide network services to our Wireless subscribers. Our failure to effectively manage these relationships, including without limitation, our minimum commitments, any system failure in their wireless networks, interruption in the services provided to us, and/or the termination of the MNSA or the NSA could have a material adverse effect on our business, financial condition and results of operations.

In July 2021, we entered into the NSA with AT&T to provide us with wireless network services. Under the NSA, we expect AT&T will become our primary network services provider. In addition, under the NSA, we have committed to activate on AT&T a minimum percentage of certain of our Wireless subscribers and to utilize AT&T's network for a minimum specified percentage of our domestic roaming data usage. We have agreed to pay AT&T at least $5 billion over the course of the 10-year term of the NSA, subject to certain terms and conditions. In 2020 in connection with the Asset Purchase Agreement, we entered into a master network services agreement with T-Mobile to provide us with wireless network services for a period of seven years (the "Prior MNSA"). In June 2022, we and T-Mobile entered into the MNSA, which amended the Prior MNSA. Under the MNSA, we agreed to a minimum purchase commitment to T-Mobile of $3.3 billion over the course of the MNSA, subject to certain terms and conditions.

As a result, failure to meet the minimum commitments to AT&T or T-Mobile could have a material adverse effect on our business, financial condition and results of operations. For example, failure to meet our minimum commitments would result in, among other things, the acceleration of financial commitments and potential termination of the NSA or the MNSA, respectively.

As we continue our 5G Network Deployment, we currently depend on T-Mobile and AT&T to provide us with network services pursuant to the MNSA and the NSA, respectively, to offer Retail Wireless services. We rely on T-Mobile and AT&T to, among other things, maintain their wireless facilities and government authorizations and to comply with government policies and regulations. If T-Mobile or AT&T fails to do so, our subscriber activations and churn rate could be negatively impacted, which in turn could have a material adverse effect on our business, financial condition and results of operations. As a result, failure to manage these relationships, including, but not limited to, effectively activating subscribers on the optimal network, transitioning subscribers to a different network, managing the existing subscriber base and vendor relationships and meeting certain minimum commitments could have a material adverse effect on our business, financial condition and results of operations.

In the event that a termination under the NSA or the MNSA were to occur, our Wireless subscribers may need to obtain a new device, a new SIM card or receive a software update to continue receiving Wireless services from us. These required measures would cause significant disruption to our Wireless subscriber base which could result in, among other things, a significant increase in our churn rate. A termination of either the NSA or the MNSA, respectively, could result in significant financial and operational challenges to mitigate such termination, and there can be no assurances that any attempts to mitigate a termination event would be successful on an acceptable timeframe or at all.

We compete with the MNOs whose networks we rely on to provide wireless services to our customers, and they may seek to limit, reduce or terminate our network access to the extent that it becomes competitively advantageous to do so.

We are able to offer wireless services to our customers through the 5G Network, and through our existing agreements with AT&T and T-Mobile, both of whom are competitors of ours. While our agreements with AT&T and T-Mobile currently have ten and seven-year terms from the date of signing, respectively, to the extent that either network service provider experiences, among other things, network capacity challenges, it is possible that our subscribers could be de-prioritized for access to those networks. Further, AT&T and/or T-Mobile may decide not to renew their agreements with us at acceptable rates, or at all. Any reduction in, or loss of, access to those networks in the future could significantly impact our ability to provide services to our subscribers and in turn have a material adverse effect on our business, financial condition and results of operations.

Changes in how network operators handle and charge for access to data that travels across their networks could adversely impact our Pay-TV business.

With respect to our Pay-TV business, we rely upon the ability of consumers to access our SLING TV services and certain DISH TV functionality through the Internet. If network operators block, restrict, slow-down or throttle or otherwise impair access to our services over their networks, our business could be negatively affected. To the extent that network operators implement usage-based pricing including, but not limited to, meaningful bandwidth caps, or otherwise try to monetize access to their networks by data providers, we could incur greater operating expenses and our SLING TV subscriber count could be negatively impacted. Furthermore, to the extent network operators create tiers of Internet access service and either charge us for or prohibit us from being available through these tiers, our SLING TV business could be negatively impacted.

In addition, many network operators that provide consumers with broadband service also provide these consumers with video programming, and these network operators may have an incentive to use their network infrastructure in a manner adverse to our continued growth and success. These risks may be exacerbated to the extent network operators are able to provide preferential treatment to their data, including, for example, by offering wireless subscribers access to owned video content over the Internet without counting against a subscriber's monthly data caps, which may give an unfair advantage to the network operator's own video content.

We cannot predict with any certainty the impact to our business that may result from changes in how network operators handle and charge for access to data that travels across their networks.

Economic weakness and uncertainty may adversely affect our ability to grow or maintain our business.

Our ability to grow or maintain our business may be adversely affected by economic weakness and uncertainty, which could result in the following:

- ***Fewer subscriber activations and increased subscriber churn rate.*** We could face fewer subscriber activations and increased subscriber churn rate due to, among other things: (i) certain economic factors that impact consumers, including, among others, inflation, rising interest rates, a potential downturn in the housing market in the United States (including a decline in housing starts) and higher unemployment, which could lead to a lack of consumer confidence and lower discretionary spending; (ii) increased price competition for our products and services; and (iii) the potential loss of independent third-party retailers, who generate a meaningful percentage of our gross new DISH TV and Wireless subscriber activations, because many of them are small businesses that are more susceptible to the negative effects of economic weakness. In particular, our DISH TV churn rate and Wireless churn rate may increase with respect to subscribers who purchase our lower tier programming packages and Retail Wireless services, and who may be more sensitive to economic weakness, including, among others, our pay-in-advance subscribers.
- ***Higher subscriber acquisition and retention costs***. Our profits may be adversely affected by increased subscriber acquisition and retention costs necessary to attract and retain high-quality subscribers during a period of economic weakness.

We are also subject to inflationary cost pressures, and if inflation continues or worsens, it could negatively impact us by increasing, among other things, our operating expenses. Inflation may lead to cost increases in multiple areas across our business, for example, rises in the prices of raw materials and manufactured goods, increased energy rates, as well as increased wage pressures and other expenses related to our labor, programming and other costs. While we attempt to increase our revenue to offset increases in costs, there is no assurance that we will be able to do so on an acceptable timeline or at all. Therefore, costs could rise faster than associated revenue, thereby resulting in a negative impact on our operating results, cash flows and liquidity.

We are facing increasing competition which could impact demand for, and result in increasing pricing pressures with respect to, our products and services.

Our Broadband and Satellite Services segment operates in an intensely competitive, consumer- and enterprise-driven and rapidly changing environment and competes with a growing number of companies that provide similar products and services to consumer and enterprise customers. There can be no assurance that we will be able to effectively compete against our competitors due to, among other factors, their significant resources and operating history. Material competitive risks to our business include, but are not limited to, the following:

- Competition from new or different technology compared to our offerings;
- Competition from existing or new competitors entering the same markets we serve;
- Government funding for competing products and services, reducing demand for our products and services; and
- Competitive pressures to provide enhanced functionality for the same or lower price with each new generation of technology.

If we are unable to take advantage of technological developments on a timely basis, or at all, we may experience a decline in demand for our services or face challenges in implementing or evolving our business strategy.

In order to grow and remain competitive, we will need to adapt to changes in available technology, including, but not limited to, artificial intelligence and machine learning, continually invest in our 5G Network Deployment, increase 5G Network capacity, enhance our existing service offerings and introduce new offerings to meet our current and potential subscribers' changing service demands. Enhancing our 5G Network, including, but not limited to, our ongoing 5G Network Deployment, is subject to risks related to, among other things, equipment choices, network deployment and management, and service offerings. In addition, our 5G Network Deployment utilizes an O-RAN architecture, which is designed to, among other things, incorporate components sourced from various third-party suppliers. Generally, these third-party suppliers do not ensure that their products will integrate with components provided by other third-party suppliers. Therefore, we generally serve as the overall system integrator.

As a result, adopting new and sophisticated technologies may result in implementation issues, such as scheduling and supplier delays, unexpected or increased costs, technological constraints, regulatory permitting issues, actual or perceived subscriber dissatisfaction and other issues that could cause delays in launching new technological capabilities, which in turn could result in significant costs or reduce the anticipated benefits of the upgrades. If our new services fail to retain or gain acceptance in the marketplace or if costs associated with these services are higher than anticipated, this could have a material adverse effect on our operating results.

Operational and Service Delivery Risks

Any deterioration in our operational performance and subscriber satisfaction could adversely affect our business, financial condition and results of operations.

If our operational performance and subscriber satisfaction with respect to our Pay-TV, Wireless, and/or Broadband and Satellite Services businesses were to deteriorate, we may experience a decrease in subscriber activations and an increase in our subscriber churn rate, which could have a material adverse effect on our business, financial condition and results of operations. To improve our operational performance, we continue to make investments in staffing, training, information systems and other initiatives, primarily in our call center and in-home service operations, and our Broadband and Satellite Service and Retail Wireless business operations. These investments are intended to, among other things, help combat inefficiencies introduced by the increasing complexity of our business, improve subscriber satisfaction, reduce subscriber churn, increase productivity and allow us to scale better over the long run. We cannot, however, be certain that our spending will ultimately be successful in improving our operational performance, and if unsuccessful, we may have to incur higher costs to improve our operational performance. While we believe that such costs will be outweighed by longer-term benefits, there can be no assurance when or if we will realize these benefits at all.

If our subscriber activations decrease, or if our subscriber churn rate, subscriber acquisition costs or retention costs increase, our financial performance will be adversely affected.

We may incur increased costs to acquire new subscribers and retain existing subscribers to same or all of our Pay-TV, Wireless or Broadband and Satellite Services businesses. For example, with respect to our Pay-TV business, our gross new DISH TV subscriber activations, net DISH TV subscriber additions, and DISH TV churn rate continue to be negatively impacted by stricter subscriber acquisition and retention policies for our DISH TV subscribers. Retention costs with respect to our DISH TV services may be driven higher by, among other things, increased upgrades of existing subscribers' equipment.

Although we expect to continue to incur expenses, such as providing retention credits and other subscriber acquisition and retention expenses, to attract and retain subscribers there can be no assurance that our efforts will generate new subscribers or result in a lower churn rate.

For our Retail Wireless business, we are currently in the process of integrating our Retail Wireless operations and making certain operational changes to enhance profitability. We are working to ensure that certain subscribers we acquire and retain are profitable under our MVNO economics. As an example, certain subscribers that use high amounts of data may be profitable for a MNO but are not profitable under a MVNO. This has caused our net Wireless subscriber additions to be negatively impacted. In addition, as we transition from a MVNO to a MNO, our subscriber acquisition costs may increase due to, among other factors, certain differences between prepaid and postpaid subscribers.

Although we expect to continue to incur expenses, such as providing retention credits and other subscriber acquisition and retention expenses, including, but not limited to, devices subsidy and upgrade discounts, to attract and retain subscribers, there can be no assurance that our efforts will generate new subscribers or result in a lower churn rate. Our subscriber acquisition costs and our subscriber retention costs can vary significantly from period to period and can cause material variability to our net income (loss) and free cash flow. Any material increase in subscriber acquisition or retention costs from current levels could have a material adverse effect on our business, financial condition and results of operations.

With respect to our Pay-TV business, programming expenses are increasing, which may adversely affect our future financial condition and results of operations.

Our programming costs represent a significant component of our total expense and we expect these costs to continue to increase on a per subscriber basis. The pay-TV industry has continued to experience an increase in the cost of programming, especially local broadcast channels and sports programming. In addition, certain programming costs are rising at a much faster rate than wages or inflation. These factors may be exacerbated by, among other factors, the increasing trend of consolidation in the media industry, partnerships between companies that offer pay-TV services and programmers and increased direct-to-consumer offerings of both exclusive and non-exclusive content, which may further increase our programming expenses. Our ability to compete successfully will depend, among other things, on our ability to continue to obtain desirable programming and deliver it to our subscribers at competitive prices.

In addition, increases in programming costs cause us to increase the rates that we charge our Pay-TV subscribers, which could in turn cause our existing Pay-TV subscribers to disconnect service. Therefore, we may be unable to pass increased programming costs on to our subscribers, which could have a material adverse effect on our business, financial condition and results of operations.

We depend on others to provide the programming that we offer to our Pay-TV subscribers and, if we fail to obtain or lose access to certain programming, our Pay-TV subscriber activations and our subscriber churn rate may be negatively impacted.

We depend on certain third parties to provide us with programming services. Our programming agreements have remaining terms ranging from less than one to up to several years and contain various renewal, expiration and/or termination provisions. We may not be able to renew these agreements on acceptable terms or at all, and these agreements may be terminated prior to expiration of their original terms. In addition, our ability to provide services under these agreements and negotiate acceptable terms depends on, among other things, the number of Pay-TV subscribers we have, our actual, perceived or anticipated financial condition and our negotiating power against each programmer, which can vary depending on the size and scale of such programmer.

Negotiations over programming carriage contracts are generally contentious, and certain programmers have, in the past, limited our access to their programming in connection with those negotiations and the scheduled expiration of their programming carriage contracts with us. In recent years, our net Pay-TV subscriber additions have been negatively impacted as a result of programming interruptions and threatened programming interruptions in connection with the scheduled expiration of programming carriage contracts with content providers. In addition, certain content providers have begun making a greater percentage of their content available as a stand-alone product available direct-to-consumer and acceleration of this trend may result in lower net Pay-TV subscriber additions, higher net Pay-TV subscriber losses and increased DISH TV churn rate.

We cannot predict with any certainty the impact to our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV churn rate resulting from programming interruptions or threatened programming interruptions that may occur in the future. As a result, we may at times suffer from periods of lower net Pay-TV subscriber additions or higher net Pay-TV subscriber losses.

We typically have a few programming contracts with major content providers up for renewal each year and if we are unable to renew any of these agreements on acceptable terms or at all, or the other parties terminate the agreements, there can be no assurance that we would be able to obtain substitute programming, or that such substitute programming would be comparable in quality or cost to our existing programming. In addition, failure to obtain access to certain programming or loss of access to programming, particularly programming provided by major content providers and/or programming popular with our subscribers, could have a material adverse effect on our business, financial condition and results of operations, including, among other things, our net Pay-TV subscriber additions.

Our programming signals in our Pay-TV business are subject to theft, and we are vulnerable to other forms of fraud that could require significant expenditures to remedy. Increases in theft of our signal or our competitors’ signals could, in addition to reducing gross new DISH TV subscriber activations, also cause our DISH TV churn rate to increase.

We may not be able to obtain necessary retransmission consent agreements at acceptable rates, or at all, from local network stations.

The Copyright Act generally gives satellite companies a statutory copyright license to retransmit local broadcast channels by satellite back into the market from which they originated, subject to obtaining the retransmission consent of local broadcast television stations that do not elect "must carry" status, as required by the Communications Act. If we fail to reach retransmission consent agreements with such broadcasters, we cannot carry their signals. This could have an adverse effect on our strategy to compete with cable and other satellite companies that provide local signals. While we have generally been able to reach retransmission consent agreements with most of these local network stations, from time to time there are stations with which we have not been able to reach an agreement, resulting in the removal of their channels primarily from our DISH TV lineup. There can be no assurance that we will secure these agreements or that we will secure new agreements on acceptable terms, or at all, upon the expiration of our current retransmission consent agreements, some of which are short-term.

In recent years, national broadcasters have used their ownership of certain local broadcast stations to require us to carry additional cable programming in exchange for retransmission consent of their local broadcast stations. These requirements may place constraints on available capacity on our satellites for other programming. Furthermore, the rates we are charged for retransmitting local channels have been increasing substantially and may exceed our ability to increase our prices to our subscribers, which could have a material adverse effect on our business, financial condition and results of operations.

We have limited satellite capacity and failures or reduced capacity could adversely affect our business, financial condition and results of operations.

Operation of our Pay-TV and Broadband and Satellite Services businesses requires that we have adequate satellite transmission capacity for the programming and services we offer. While we generally have had in-orbit satellite capacity sufficient to transmit our existing channels and provide satellite internet coverage and some backup capacity to recover the transmission of certain critical programming and coverage, our backup capacity is limited.

Our ability to earn revenue from our Pay-TV and Broadband and Satellite Services businesses depends on, among other things, the usefulness of our owned and leased satellites, each of which has a limited useful life. A number of factors affect the useful lives of the satellites, including, among other things, the quality of their construction, the durability of their component parts, the ability to continue to maintain proper orbits and control over the satellites' functions, the efficiency of the launch vehicles used, and the remaining on-board fuel following in-orbit insertion. Generally, the minimum design life of each of our owned and leased satellites ranges from 12 to 15 years. We can provide no assurance, however, as to the actual useful lives of any of these satellites. Our operating results could be adversely affected if the useful life of any of our owned or leased satellites was significantly shorter than the minimum design life.

See "*Item 1A. Risk Factors – Risks Related to our Satellites"* in this Annual Report on Form 10-K for further information.

Extreme weather may result in risk of damage to our infrastructure and therefore our ability to provide services, and may lead to changes in federal, state and foreign government regulation, all of which could materially and adversely affect our business, results of operations and financial condition.

Extreme weather has the potential to directly damage our network facilities and other infrastructure and/or disrupt our ability to build and maintain portions of our network, and could potentially disrupt suppliers' ability to, among other things, provide the products and services we require to support our operations. Any such disruption could delay our 5G Network Deployment plans, interrupt service for our customers, increase our costs and have a negative effect on our operating results. The potential physical effects of extreme weather, such as storms, floods, fires, freezing conditions, sea-level rise and other adverse weather events could negatively affect our operations and infrastructure and, as a result, our financial results. Operational impacts resulting from extreme weather, such as, among other things, damage to our network infrastructure, could result in increased costs and loss of revenue. We could be required to incur significant costs to improve the resiliency of our infrastructure and otherwise prepare for, respond to and mitigate such weather events. It is impossible to accurately predict the materiality of any potential losses or costs associated with extreme weather.

Our failure to effectively invest in, introduce, and implement new competitive products and services could cause our products and services to become obsolete and could negatively impact our business.

Technology in the pay-TV, wireless and broadband and satellite services industries changes rapidly as new technologies are developed, which could cause our products and services to become obsolete. We and our suppliers may not be able to keep pace with technological developments. Our operating results are dependent to a significant extent upon our ability to continue to introduce new products and services, to upgrade existing products and services on a timely basis, and to reduce costs of our existing products and services. We may not be able to successfully identify new product or service opportunities or develop and market these opportunities in a timely or cost-effective manner.

The research and development of new, technologically advanced products is a complex and uncertain process requiring high levels of innovation and investment. The success of new product and service development depends on many factors, including among others, the following:

- the difficulties and delays in the development, production, timely completion, testing and marketing of products and services;
- the cost of the products and services;
- the proper identification of subscriber need and subscriber acceptance of products and services;
- the development of, approval of and compliance with industry standards;
- the amount of resources we must devote to the development of new technologies; and
- the ability to differentiate our products and services and compete with other companies in the same markets.

If the new technologies on which we focus our research and development investments fail to achieve acceptance in the marketplace, our competitive position could be negatively impacted, causing a reduction in our revenues and earnings. For example, our competitors could use proprietary technologies that are perceived by the market as being superior. In addition, delays in the delivery of components or other unforeseen problems associated with our technology may occur that could materially and adversely affect our ability to generate revenue, offer new products and services and remain competitive. Furthermore, after we have incurred substantial costs, one or more of the products or services under our development, or under development by one or more of our strategic partners, could become obsolete prior to it being widely adopted.

If our products and services are not competitive, our business could suffer and our financial performance could be negatively impacted. Our products and services may also experience quality problems, including, but not limited to, outages and service slowdowns, from time to time. If the quality of our products and services does not meet our subscribers' expectations, then our business, and ultimately our reputation, could be negatively impacted.

We rely on a single vendor or a limited number of vendors to provide certain key products or services to us, and the inability of these key vendors to meet our needs could have a material adverse effect on our business.

Historically, we have contracted with and rely on a single vendor or a limited number of vendors to provide certain key products or services to us such as information technology support, billing systems, security access devices, and many components that we provide to subscribers in order to deliver services from our Pay-TV, Wireless and Broadband or Satellite Services businesses. We also rely on a limited number of vendors to supply our wireless devices and wireless network equipment used in connection with our 5G Network Deployment. If these vendors are unable to meet our needs because, among other things, they fail to perform adequately, are no longer in business, are experiencing shortages or supply chain issues or discontinue a certain product or service we need, our business, financial condition and results of operations may be adversely affected.

We have experienced in the past and may continue to experience shortages driven by raw material availability (which may be negatively impacted by, among other things, COVID-19 policies, trade protection policies such as tariffs and or/escalating trade tensions, particularly with countries in Asia), manufacturing capacity, labor shortages, industry allocations, natural disasters, logistical delays and significant changes in the financial or business conditions of its suppliers that negatively impact our operations.

While alternative sources for these products and services exist, we may not be able to develop these alternative sources quickly and cost-effectively, or at all, which could materially impair our ability to timely deliver our products to our subscribers or operate our business. Furthermore, our vendors may request changes in pricing, payment terms or other contractual obligations between the parties, which could require us to make substantial additional investments.

We depend on independent third parties to solicit orders for our services that represent a meaningful percentage of our total gross new subscriber activations.

While we offer products and services through direct sales channels, a meaningful percentage of our total gross new subscriber activations are generated through independent third parties such as small retailers, direct marketing groups, local and regional consumer electronics stores, nationwide retailers, and telecommunications companies. Most of our independent third-party retailers are not exclusive to us and some of our independent third-party retailers may favor our competitors' products and services over ours based on the relative financial arrangements associated with marketing our products and services and those of our competitors. Furthermore, most of these independent third-party retailers are significantly smaller than we are and may be more susceptible to economic weaknesses that make it more difficult for them to operate profitably. From time to time, we may adjust the economic terms of agreements with our independent third-party retailers to, among other things, further align our interests with theirs. It may be difficult to better align our interests with our independent third-party retailers because of their capital and liquidity constraints. In addition, any changes we may make may not result in the intended benefits and as a result, negatively affect our operating results. Loss of these relationships could have an adverse effect on our subscriber base and certain of our other key operating metrics because we may not be able to develop comparable alternative distribution channels.

Risks Related to our Human Capital

We rely on highly skilled personnel for our business, and any inability to hire and retain key personnel or to hire qualified personnel may negatively affect our business, financial condition and results of operations.

We believe that our future success depends to a significant extent upon the performance of Mr. Charles W. Ergen, our Chairman, and certain other key executives. The loss of Mr. Ergen or certain other key executives, the ability to effectively provide for the succession of our senior management, or the ability of Mr. Ergen or such other key executives to devote sufficient time and effort to our businesses could have a material adverse effect on our business, financial condition and results of operations. Although some of our key executives may have agreements relating to their equity compensation that limit their ability to work for or consult with competitors, we generally do not have employment agreements with them.

In addition, the success of the Integration will depend in part on the retention of personnel critical to our business and operations due to, for example, their technical skills or management expertise. Competition for qualified personnel can be intense and qualified personnel can be in high demand. Current and prospective employees may experience uncertainty about their future role until strategies regarding these employees are announced or executed, which may impair our ability to attract, retain and motivate key management, technical and other personnel following the Merger. If we are unable to attract and retain personnel, including key management, who are critical to the successful Integration and future operations of the companies, we could face, among other risks, disruptions in their operations, loss of existing customers, loss of key information, expertise or know-how and unanticipated additional recruitment and training costs. In addition, the loss of key personnel could diminish the anticipated benefits of the Merger.

Our business growth and customer retention strategies rely in part on the work of technically skilled employees.

Our response to technological developments depends, to a significant degree, on the work of technically skilled employees. In addition, we have made and will continue to make significant investments in, among other things, research, development and marketing for new products, services, satellites and related technologies, as well as entry into new business areas. Investments in new technologies, satellites and business areas are inherently dependent on these technically skilled employees as well. Competition for the services of such employees has become more intense as demand for these types of employees grows. We compete with other companies for these employees and although we strive to attract, retain, motivate and manage these employees, we may not succeed in these respects. Additionally, if we were to lose certain key technically skilled employees, the loss of knowledge and intellectual capital might have an adverse impact on our business. Furthermore, we believe that our Wireless business, including, but not limited to, our ability to complete our 5G Network Deployment, is dependent on our ability to identify, hire, develop, motivate and retain a team of highly skilled personnel with knowledge of the wireless industry. Our Wireless business will be adversely affected if we fail to effectively hire, develop, motivate and retain highly skilled personnel with knowledge of the wireless industry.

The success of our business is also dependent on our ability to recruit engineers and other professionals, including those who are citizens of other countries. Immigration laws in the U.S. and other countries in which we operate are subject to legislative and regulatory changes, as well as variations in the standards of application and enforcement due to, among other things, political forces and economic conditions. It is difficult to predict the political and economic events that could affect immigration laws, or the restrictive impact they could have on obtaining or renewing work visas for our professionals. If immigration laws are changed or if new and more restrictive government regulations are enacted or increased, our access to qualified and skilled professionals may be limited.

Risks Related to our Satellites

Our owned and leased satellites in orbit are subject to significant operational and environmental risks that could limit our ability to utilize these satellites.

Satellites are subject to significant operational risks while in orbit. These risks include, but are not limited to, malfunctions, commonly referred to as anomalies, which have occurred and may occur in the future in our satellites and the satellites of other operators. Any single anomaly could materially and adversely affect our ability to utilize the satellite. Anomalies may also reduce, among other things, the expected capacity, commercial operation and/or useful life of a satellite, thereby reducing the revenue that could be generated by that satellite, or create additional expenses due to the need to provide replacement or back-up satellites or satellite capacity earlier than planned and could have a material adverse effect on our business. We may not be able to prevent or mitigate the impacts of anomalies in the future.

Meteoroid events, decommissioned satellites, increased solar activity and other adverse events also pose a potential threat to all in-orbit satellites. We may be required to perform maneuvers to avoid collisions and these maneuvers may prove unsuccessful or could reduce the useful life of the satellite through the expenditure of fuel to perform these maneuvers.

Generally, the minimum design life of each of our satellites is 15 years. We can provide no assurance, however, as to the actual operational lives of our satellites, which may be shorter or longer than their design lives. Our ability to earn revenue depends on the continued operation of our satellites, each of which has a limited useful life.

We generally do not carry in-orbit insurance on our satellites or payloads because we have assessed that the cost of insurance is not economical relative to the risk of failures. If one or more of our in-orbit uninsured satellites or payloads fail, we could be required to record significant impairment charges for the satellite or payload.

Our satellites under construction are subject to risks related to, among other things, construction, technology, regulations and launch that could limit our ability to utilize these satellites, increase costs and adversely affect our business.

Satellite construction and launch are subject to significant risks, including, but not limited to, manufacturing and delivery delays, anomalies, launch failure and incorrect orbital placement. The technologies in our satellite designs are very complex and difficulties in constructing our designs could result in delays in the deployment of our satellites or increased or unanticipated costs. There can be no assurance that the technologies in our existing satellites or in new satellites that we design, acquire and build will work as we expect, will not become obsolete, that we will realize any or all of the anticipated benefits of our satellite designs or our new satellites, and/or that we will obtain all regulatory approvals required to operate our new or acquired satellites on an acceptable timeline or at all. Launch anomalies and failures can result in significant delays in the deployment of satellites because of the need both to construct replacement satellites, which can take significant amounts of time, and to obtain other launch opportunities. Such significant delays have and could in the future materially affect, among other things, our business, our ability to meet regulatory or contractual required milestones, the availability and our use of other or replacement satellite resources and our ability to provide services to customers. In addition, significant delays in a satellite program could give customers who have purchased or reserved capacity on that satellite a right to terminate their service contracts relating to the satellite. We may not be able to accommodate affected customers on other satellites until a replacement satellite is available. In addition, we generally do not carry in-orbit insurance on our satellites or payloads because we have assessed that the cost of insurance is not economical relative to the risk of failures. If we do obtain launch or in-orbit insurance, it may not cover the full cost of constructing and launching or replacing a satellite nor fully cover our losses in the event of a launch failure or significant degradation.

Our use of certain satellites is often dependent on satellite coordination agreements, which may be difficult to obtain.

Satellite operators are required to enter into international spectrum coordination agreements with other affected satellite operators and must be approved by the relevant governments. If a required agreement cannot be concluded, we may have to operate the applicable satellite(s) in a manner that does not cause harmful radio frequency interference with the affected satellite. If we cannot do so, we may have to cease operating such satellite(s) at the affected orbital locations.

We may face interference from other services sharing satellite spectrum.

The FCC and other national, state, local and international regulators have adopted rules or may adopt rules in the future that require us to share spectrum on a basis with other radio services. There can be no assurance that these operations would not interfere with our operations and adversely affect our business. In the event that the FCC and/or another regulator determines that our spectrum interferes with another service, we may be required to, among other things, find or develop a solution. We cannot make any assurance that we will be able to do so on an acceptable timeline or at all, or that such solution will not adversely affect our business.

Risks Related to our Products and Technology

Our business depends on certain intellectual property rights and on not infringing the intellectual property rights of others.

We rely on our patents, copyrights, trademarks and trade secrets, as well as licenses and other agreements with our vendors and other parties, to use our technologies, conduct our operations and sell our products and services. Legal challenges to our intellectual property rights and claims of intellectual property infringement by third parties could require that we enter into royalty or licensing agreements on unfavorable terms, incur substantial monetary liability or be enjoined preliminarily or permanently from further use of the intellectual property in question or from the continuation of our business as currently conducted, which could require us to change our business practices or limit our ability to compete effectively or could have an adverse effect on our results of operations.

Even if we believe any such challenges or claims are without merit, they can be time consuming and costly to defend and divert management's attention and resources away from our business. Moreover, because of the rapid pace of technological change, we rely on technologies developed by or licensed from third parties, and if we are unable to obtain or continue to obtain licenses from these third parties on reasonable terms or at all, our business, financial condition and results of operations could be adversely affected.

In addition, we work with certain third parties such as vendors, contractors and suppliers for the development and manufacture of components that are integrated into our products and services, and our products and services may contain technologies provided to us by these third parties or other third parties. We may have little or no ability to determine in advance whether any such technology infringes the intellectual property rights of others. Our vendors, contractors and suppliers may not be required to indemnify us if a claim of infringement is asserted against us, license the potential infringing technology from other third parties or they may be required to indemnify us only up to a maximum amount, above which we would be responsible for any further costs or damages.

Legal challenges to these intellectual property rights may impair our ability to use the products, services and technologies that we need in order to operate our business and may materially and adversely affect our business, financial condition and results of operations. Furthermore, our digital content offerings depend in part on effective digital rights management technology to control access to digital content. If the digital rights management technology that we use is compromised or otherwise malfunctions, content providers may be unwilling to provide access to their content. Changes in the copyright laws or how such laws may be interpreted could impact our ability to deliver content and provide certain features and functionality, particularly over the Internet.

We are, and may become, party to various lawsuits which, if adversely decided, could have a significant adverse impact on our business, particularly lawsuits regarding intellectual property.

We are, and may become, subject to various legal proceedings and claims which arise in the ordinary course of business, including, among other things, intellectual property disputes. Many entities, including some of our competitors, have or may in the future obtain patents and other intellectual property rights that may cover or affect products or services related to those that we offer. In general, if a court determines that one or more of our products or services infringes on intellectual property held by others, we may be required to cease developing or marketing those products or services, to obtain licenses from the holders of the intellectual property at a material cost, or to redesign those products or services in such a way as to avoid infringing the intellectual property. If those intellectual property rights are held by a competitor, we may be unable to obtain the intellectual property at any price, which could adversely affect our competitive position. See "*Item 1. Business – Patents and Other Intellectual Property"* in this Annual Report on Form 10-K for further information. We may not be aware of all intellectual property rights that our services or the products used in connection with our services may potentially infringe. In addition, patent applications in the United States are confidential until the Patent and Trademark Office either publishes the application or issues a patent (whichever arises first). Therefore, it is difficult to evaluate the extent to which our services or the products used in connection with our services may infringe claims contained in pending patent applications. Furthermore, it is sometimes not possible to determine definitively whether a claim of infringement is valid.

If our products contain defects, we could be subject to significant costs to correct such defects and our product and network service contracts could be delayed or cancelled, which could adversely affect our revenue.

Our products and networks we deploy are highly complex, and some may contain defects when first introduced or when new versions or enhancements are released, despite testing and our quality control procedures. Defects may also occur in components and products that we purchase from third parties. In addition, many of our products and network services are designed to interface with our customers' existing networks, each of which has different specifications and utilizes multiple protocol standards. Our products and services must interoperate with the other products and services within our customers' networks, as well as with future products and services that might be added to these networks, to meet our customers' requirements. There can be no assurance that we will be able to detect and fix all defects in the products and networks we sell, in a timely manner or at all. The occurrence of, and failure to remedy, any defects, errors or failures in our products or network services could materially affect our business.

Risks Related to Cybersecurity

Any failure or inadequacy of our information technology infrastructure and communications systems or those of third parties that we use in our operations, including, without limitation, those caused by cyber-attacks or other malicious activities, could disrupt or harm our business.

The capacity, reliability and security of our information technology hardware and software infrastructure (including, but not limited to, our billing systems) and communications systems, or those of third parties that we use in our operations, are important to the operation of our business, which has in the past and would in the future suffer in the event of system failures or cyber-attacks. Likewise, our ability to expand and update our information technology infrastructure in response to, among other things, our growth and changing needs is important to the continued implementation of our new service offering initiatives. Our inability to expand or upgrade our technology infrastructure could have adverse consequences, which could include, among other things, the delayed implementation of new service offerings, service or billing interruptions, and the diversion of management and developmental resources.

We rely on certain third parties for developing key components of our information technology and communications systems and ongoing service, all of which affect our Pay-TV, Wireless, and Broadband and Satellite Services businesses. Some of our key systems and operations, including, but not limited to, those supplied by certain third-party providers, are not fully redundant, and our disaster recovery planning cannot account for all eventualities. Interruption and/or failure of any of these systems could, among other things, disrupt our operations, interrupt our services, result in significant financial expenditures and damage our reputation, thus adversely impacting our ability to provide our services, retain our current subscribers and attract new Pay-TV, Wireless, and Broadband and Satellite Services subscribers and complete our 5G Network Deployment.

In addition, although we take protective measures designed to secure our information technology systems and endeavor to modify such protective measures as circumstances warrant, our information technology hardware and software infrastructure and communications systems, or those of third parties that we use in our operations, may be vulnerable to a variety of interruptions, including, without limitation, natural disasters, terrorist attacks, telecommunications failures, cyber-attacks and other malicious activities such as unauthorized access, physical or electronic break-ins, misuse, computer viruses or other malicious code, computer denial of service attacks and other events that could disrupt or harm our business. These protective measures may not be sufficient for all eventualities and may themselves be vulnerable to hacking, malfeasance, system error or other irregularities.

For example, certain parties may attempt to fraudulently induce employees or subscribers into disclosing usernames, passwords or other sensitive information, which may in turn be used to access our information technology systems. In addition, third-party providers of some of our key systems may also experience interruptions to their information technology hardware and software infrastructure and communications systems that could adversely impact us and over which we may have limited or no control. We may obtain certain confidential, proprietary and personal information about our subscribers, personnel and vendors, and may provide this information to third parties in connection with our business. If one or more of such interruptions or failures occur to us or our third-party providers, it potentially could jeopardize such information and other information processed and stored in, and transmitted through, our or our third-party providers' information technology hardware and software infrastructure and communications systems, or otherwise cause interruptions or malfunctions in our operations, which could result in, among other things, lawsuits, government claims, investigations or proceedings, significant losses or reputational damage. Due to the fast-moving pace of technology, it may be difficult to detect, contain and remediate every such event on an acceptable timeline or at all.

Our 5G Network Deployment utilizes an O-RAN architecture, which is designed to, among other things, incorporate components sourced from various third-party suppliers. Generally, these third-party suppliers do not ensure that their products will integrate with components provided by other third-party suppliers. As a result, we generally serve as the overall system integrator. We may be required to expend significant additional resources to modify our protective measures or to investigate and remediate vulnerabilities or other exposures, and we may be subject to financial losses. In addition, this may divert management's attention and resources away from our business, and therefore adversely affect our business. Furthermore, the amount and scope of insurance we maintain may not cover all expenses related to such activities or all types of claims that may arise.

As a result of the increasing awareness concerning the importance of safeguarding personal information, the potential misuse of such information and legislation that has been adopted or is being considered regarding the protection, privacy and security of personal information, the potential liability associated with information-related risks is increasing, particularly for businesses like ours that handle personal subscriber data. The occurrence of any network or information system related events or security breaches could have a material adverse effect on, among other things, our reputation, business, financial condition and results of operations. Significant incidents could result in a disruption of our operations, subscriber dissatisfaction, damage to our reputation or a loss of subscribers and revenues.

We have experienced and may experience in the future cyber-attacks and other attempts to gain unauthorized access to our systems on a consistent basis.

We have experienced and may experience in the future security issues, whether due to, among other things, insider error or malfeasance or system errors or vulnerabilities in our or our third parties' systems, which could result in, among other things, substantial legal and financial exposure, government inquiries and enforcement actions, litigation, diversion of management time and attention from our existing businesses and unfavorable media coverage. We may be unable to anticipate or detect attacks or vulnerabilities or implement adequate preventative measures on an acceptable timeframe or at all. Attacks and security issues could also compromise trade secrets and other sensitive information. In February 2023, we disclosed that our systems were subject to a cyber-security incident that compromised certain data. During the first quarter of 2023, we incurred certain cyber-security- related expenses, including, but not limited to, costs to remediate the incident and provide additional customer support. Subsequent to the first quarter of 2023, we have not incurred material expenses resulting from the cyber-security incident and do not expect to incur material expenses in future periods.

We are subject to persistent cyber-security incidents and threats to our networks and systems. Although we take protective measures designed to secure our information technology systems and endeavor to modify such protective measures as circumstances warrant, our information technology hardware and software infrastructure and communications systems, or those of third parties that we use in our operations, may be vulnerable to a variety of interruptions, including, without limitation, natural disasters, terrorist attacks, telecommunications failures, cyber-attacks and other malicious activities such as unauthorized access, physical or electronic break-ins, misuse, computer viruses or other malicious code, computer denial of service attacks and other events that could disrupt or harm our business. The protective measures we take may not be sufficient for all eventualities and may themselves be vulnerable to hacking, malfeasance, system error, or other irregularities. For example, certain parties may attempt to fraudulently induce employees or subscribers into disclosing usernames, passwords or other sensitive information, which may in turn be used to access our information technology systems.

The confidentiality, integrity, and availability of our services and products depends on the continuing operation of our information technology and other enabling systems.

Our systems are vulnerable to damage, intrusion, or disruption from, among other things, criminal and/or terrorist attacks, telecommunications failures, computer viruses, ransomware attacks, digital denial of service attacks, phishing, and/or other attempts to injure or maliciously access our systems. Some of our systems are not fully redundant, and disaster recovery planning cannot account for all possibilities. In addition, our products and services are highly technical and complex and may contain errors or vulnerabilities, which could result in interruptions in or failure of our services or systems. Failure to respond, mitigate and/or remedy any cyber-attack or other information technology failure on a timely basis or at all, could materially affect our business.

Our international businesses expose us to additional risks that could harm our business.

Our international operations in our Broadband and Satellite Services businesses continue to grow. In addition to risks described elsewhere herein, the different regions and countries in which we operate our businesses outside of the U.S. expose us to increased risks due to different privacy and cyber-related laws in each of these locations. The same cyber-related issue could have different consequences depending on, among other factors, the region or country of occurrence, the laws applicable in each case and the different levels of enforcement by regulatory and governmental authorities in each jurisdiction. These risks include, but are not limited to, the following:

- Data privacy and security concerns relating to our technology and practices could, among other things, damage our reputation, cause us to incur significant liability, and deter current and potential users or customers from using our products and services;
- Software bugs or defects, security breaches, and attacks on our systems could result in the improper disclosure of our user data which could harm, among other things, our business reputation and result in legal and/or government action;
- Concerns about our practices about the collection, use, disclosure, or security of personal information or other data-privacy-related matters, even if unsubstantiated, could harm our reputation and financial condition. Our policies and practices may change over time as expectations regarding privacy and data change.

Our ongoing investments in security will likely continue to identify new vulnerabilities within our services and products.

In addition to our efforts to, among other things, mitigate cyber-attacks and improve our products and services, we are making significant investments to assure that our products are resistant to compromise. As a result of these efforts, we could discover new vulnerabilities within our products and systems that would be undesirable for our users and customers. We have discovered and remediated, and may discover new vulnerabilities due to the scale of activities on our platforms, and may not be able to mitigate or fix such vulnerabilities on acceptable timeframes or at all, due to other factors, including, but not limited to, issues outside of our control such as natural disasters/climate change such as sea level rise, drought, flooding, wildfires, increased storm severity, pandemics like COVID-19 and power loss, and we may be notified of such vulnerabilities via third parties. Any of the foregoing developments may, among other things, negatively affect user and customer trust, harm our reputation and brands, and adversely affect our business and financial results.

Any such developments may also subject us to litigation and regulatory inquiries, which could result in monetary penalties and damages, distract management's time and attention, and lead to enhanced regulatory oversight.

Acquisition and Capital Structure Risks

We have substantial debt outstanding and may incur additional debt.

As of December 31, 2023, our total long-term debt and finance lease obligations (including current portion) outstanding, including the debt of our subsidiaries, was $22.764 billion. Our debt levels could have significant consequences, including, but not limited to;

- making it more difficult to satisfy our obligations;
- a dilutive effect on our outstanding equity capital or future earnings;
- increasing our vulnerability to general adverse economic conditions, including, but not limited to, changes in interest rates;
- requiring us to devote a substantial portion of our cash to make interest and principal payments on our debt, thereby reducing the amount of cash available for other purposes. As a result, we would have limited financial and operating flexibility to changing economic and competitive conditions;
- limiting our ability to raise additional debt because it may be more difficult for us to obtain debt financing on attractive terms or at all; and
- placing us at a disadvantage compared to our competitors that are less leveraged.

In addition, we will incur additional debt in the future. The terms of the indentures relating to our senior notes, senior secured notes and our Convertible Notes permit us to incur additional debt. If new debt is added to our current debt levels, the risks we now face could intensify.

We have made substantial investments to acquire certain wireless spectrum licenses and other related assets, and may be unable to realize a return on these assets.

We have invested a total of over $30 billion to acquire certain Wireless spectrum licenses. we may need to make significant additional investments or partner with others to, among other things, complete the 5G Network Deployment and further commercialize, build-out and integrate these licenses and related assets and any additional acquired licenses and related assets, as well as to comply with regulations applicable to such licenses. Depending on the nature and scope of such activities, any such investments or partnerships could vary significantly. In addition, as we complete our 5G Network Deployment, we have and will continue to incur significant additional expenses related to, among other things, research and development, wireless testing, and ongoing upgrades to the wireless network infrastructure, software, and third-party integration. As a result of these investments, among other factors, we plan to raise additional capital, which may not be available on favorable terms. We may also determine that additional wireless spectrum licenses may be required to complete our 5G Network Deployment and to compete effectively with other wireless service providers.

We may need to make significant additional investments or partner with others to, among other things, complete our 5G Network Deployment and further commercialize, build-out and integrate these licenses and related assets and any additional acquired licenses and related assets, as well as to comply with regulations applicable to such licenses. Depending on the nature and scope of such activities, any such investments or partnerships could vary significantly.

There is no assurance that the FCC will find our 5G Network Deployment sufficient to meet the build-out requirements to which our Wireless spectrum licenses are subject. Failure to comply with FCC build-out requirements and/or renewal requirements in a given license area could result in, among other things, revocation of the license for that license area. The revocation of a material portion of our Wireless spectrum licenses would have a significant material adverse effect on our 5G Network Deployment and our future business, results of operations and financial condition.

We will need to raise additional capital in the future, which may not be available on favorable terms, to fund the efforts described above, as well as, among other things, make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. There can be no assurance that we will be able to profitably deploy these Wireless spectrum licenses, which may affect the carrying amount of these assets and our future financial condition or results of operations.

Furthermore, the fair values of wireless spectrum licenses may vary significantly in the future. In particular, valuation swings could occur if:

- the consolidation in the wireless industry allows or requires wireless carriers to sell significant portions of their wireless spectrum holdings, which could in turn reduce the value of our spectrum holdings;
- the sale of spectrum by one or more wireless providers occurs;
- the FCC pursues certain policies designed to increase the number of wireless spectrum licenses available in each of our markets; or
- the FCC conducts additional wireless spectrum auctions.

If the fair value of our Wireless spectrum licenses were to decline significantly, the value of these licenses could be subject to impairment charges. We assess potential impairments to our indefinite-lived intangible assets annually or more often if indicators of impairment arise to determine whether there is evidence that indicates an impairment condition may exist.

We capitalize our interest expense associated with the acquisition or construction of certain assets including, among others, our Wireless spectrum licenses. As the carrying amount of these licenses exceeds the carrying value of our long-term debt, substantially all of our interest expense is being capitalized. This capitalized interest increases the carrying amount of these licenses for purposes of impairment testing, under which we consider whether it is more likely than not that the fair value of these licenses exceeds the carrying amount of these licenses. An increase in the carrying amount of these licenses combined with other changes in circumstances and/or market conditions could result in an increased risk of an impairment of these licenses in the future, and an impairment of these assets may have a material adverse effect on our business, results of operations and financial condition.

We may pursue acquisitions, dispositions, capital expenditures, the development, acquisition and launch of new satellites and other strategic initiatives to complement or expand our business, which may not be successful and we may lose a portion or all of our investment in these acquisitions and transactions.

Our future success may depend on opportunities to buy or otherwise invest in other businesses or technologies that could complement, enhance or expand our current business or products or that might otherwise offer us growth opportunities. To pursue this strategy successfully, we must identify attractive acquisition or investment opportunities and successfully complete transactions, some of which may be large and complex. We may not be able to identify or complete attractive acquisition or investment opportunities due to, among other things, the intense competition for these transactions. If we are not able to identify and complete such acquisition or investment opportunities, our future results of operations and financial condition may be adversely affected.

We may be unable to obtain in the anticipated time frame, or at all, any regulatory approvals required to complete proposed acquisitions and other strategic transactions. Furthermore, the conditions imposed for obtaining any necessary approvals could delay the completion of such transactions for a significant period of time or prevent them from occurring at all. We may not be able to complete such transactions, and such transactions, if executed, pose significant risks and could have a negative effect on our operations. Any transactions that we are able to identify and complete may involve a number of risks, including, but not limited to:

- the risks associated with developing and constructing new satellites;
- the diversion of management's attention from our existing business onto a strategic initiative;
- the possible adverse effects on our and our targets' and partners' business, financial condition or operating results during the Integration process;
- the high degree of risk inherent in these transactions, which could become substantial over time, and higher exposure to significant financial losses if the underlying ventures are not successful on an acceptable timeline or at all;
- the possible inability to achieve the intended objectives of the transaction; and
- the risks associated with complying with contractual provisions and regulations applicable to the acquired business, which may cause us to incur substantial expenses;
- the disruption of relationships with employees, vendors or customers; and
- the risks associated with foreign and international operations and/or investments or dispositions.

In addition, we may not be able to successfully or profitably integrate, operate, maintain and manage our newly acquired operations or employees on an acceptable timeline or at all. We may not be able to maintain uniform standards, controls, procedures and policies, and this may lead to, among other things, operational inefficiencies. In addition, the Integration process may strain our financial and managerial controls and reporting systems and procedures.

New acquisitions, joint ventures and other transactions may require the commitment of significant capital that would otherwise be directed to investments in our existing business. To pursue acquisitions and other strategic transactions, we may need to raise additional capital in the future, which may not be available on favorable terms, or at all.

In addition to committing capital to complete the acquisitions, substantial capital may be required to operate the acquired businesses following their acquisition. These acquisitions may result in significant financial losses if the intended objectives of the transactions are not achieved. Some of the businesses that we have acquired have experienced significant operating and financial challenges in their recent history, which in some cases resulted in these businesses commencing bankruptcy proceedings prior to our acquisition. We may acquire similar businesses in the future.

There is no assurance that we will be able to successfully address the challenges and risks encountered by these businesses following their acquisition. If we are unable to successfully address these challenges and risks, our business, financial condition and/or results of operations may suffer.

We will need additional capital, which may not be available on favorable terms, to fund current obligations, continue investing in our business and to finance acquisitions and other strategic transactions.

We do not currently have the necessary cash on hand and/or projected future cash flows to fund the November 2024 debt maturity and subsequent interest on our outstanding debt. To address our capital needs, we are in active discussions with funding sources to raise additional capital and refinance our outstanding debt. We cannot provide assurances that we will be successful in obtaining such new financing and/or refinancing the existing debt obligations necessary for us to have sufficient liquidity. If we are not successful in these endeavors, then capital expenditures to meet future FCC build out requirements and wireless customer growth initiatives will be adversely affected.

Weakness in the equity markets could make it difficult for us to raise equity financing without incurring substantial dilution to our existing shareholders. Adverse changes in the credit markets including, but not limited to, rising interest rates and macro-economic conditions, could increase our borrowing costs and/or make it more difficult for us to obtain financing for our operations or for us to refinance existing indebtedness on favorable terms.

Continued rising interest rates could increase our cost of capital and require us to devote a higher percentage of our cash flow to interest payments, which could have a material adverse effect on our financial results.

In addition, economic weakness, weak results of operations or other factors may limit our ability to, among other things, generate sufficient internal cash to fund investments, capital expenditures, acquisitions and other strategic transactions, as well as to fund ongoing operations and service our debt. We may be unable to generate cash flows from operating activities sufficient to pay the principal, premium, if any, and interest on our debt and other obligations. If we are unable to service our debt and other obligations from cash flows from operating activities, we may need to refinance or restructure all or a portion of such obligations prior to maturity.

Any refinancing or restructuring could have a material adverse effect on our business, results of operations and/or financial condition. In addition, we cannot guarantee that any refinancing or restructuring would sufficiently meet any debt or other obligations then due. If we do not pay interest or otherwise fulfill our debt obligations when due, our business, cash flows, results of operations and financial condition would be materially adversely impacted. In addition, the going concern qualification issued by our auditors could adversely impact investors as well as our relationships with employees and suppliers.

Furthermore, our borrowing costs can be affected by short and long-term debt ratings assigned by independent rating agencies, which are based, in significant part, on, among other factors, our performance as measured by their credit metrics. A decrease in these ratings would likely increase our cost of borrowing and/or make it more difficult for us to obtain financing.

A severe disruption in the global financial markets could impact some of the financial institutions with which we do business, and such instability could also affect our access to financing. As a result, these conditions could make it difficult for us to accurately forecast and plan future business activities because we may not have access to funding sources necessary for us to pursue organic and strategic business development opportunities.

The conditional conversion features of our Convertible Notes, if triggered, may adversely affect our financial condition.

In the event the conditional conversion features of the Convertible Notes are triggered, holders of the Convertible Notes will be entitled to convert the Convertible Notes at any time during specified periods at their option. If one or more holders elect to convert their Convertible Notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our Class A common stock, we would be required to make cash payments to satisfy all or a portion of our conversion obligation based on the conversion rate, which could adversely affect our liquidity.

In addition, even if holders do not elect to convert their Convertible Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Convertible Notes as a current rather than long-term liability, which could result in a material reduction of our net working capital.

The convertible note hedge and warrant transactions that we entered into in connection with the offering of the Convertible Notes due 2026 may affect the value of the Convertible Notes due 2026 and our Class A common stock.

In connection with the offering of the Convertible Notes due 2026, we entered into convertible note hedge transactions with certain option counterparties (each an "option counterparty"). The convertible note hedge transactions are expected generally to reduce the potential dilution upon conversion of the Convertible Notes due 2026 and/or offset any cash payments we are required to make in excess of the principal amount of converted Convertible Notes due 2026, as the case may be. We also entered into warrant transactions with each option counterparty. The warrant transactions could separately have a dilutive effect on our Class A common stock to the extent that the market price per share of our Class A common stock exceeds the strike price of the warrants, unless we elect to settle the warrants in cash. In connection with establishing its initial hedge of the convertible note hedge and warrant transactions, each option counterparty or an affiliate thereof may have entered into various derivative transactions with respect to our Class A common stock concurrently with or shortly after the pricing of the Convertible Notes due 2026.

This activity could increase (or reduce the size of any decrease in) the market price of our Class A common stock or the Convertible Notes due 2026 at that time. In addition, each option counterparty or an affiliate thereof may modify its hedge position by entering into or unwinding various derivatives with respect to our Class A common stock and/or purchasing or selling our Class A common stock or other securities of ours in secondary market transactions prior to the maturity of the Convertible Notes due 2026 (and is likely to do so during any observation period related to a conversion of the Convertible Notes due 2026). This activity could also cause or avoid an increase or a decrease in the market price of our Class A common stock or the Convertible Notes due 2026.

In addition, if any such convertible note hedge and warrant transactions fail to become effective, each option counterparty may unwind its hedge position with respect to our Class A common stock, which could adversely affect the value of our Class A common stock and the value of the Convertible Notes due 2026.

We are subject to counterparty risk with respect to the convertible note hedge transactions.

Each option counterparty to the convertible note hedge transactions is a financial institution, and we will be subject to the risk that it might default under the convertible note hedge transaction. Our exposure to the credit risk of an option counterparty will not be secured by any collateral. Global economic conditions have from time to time resulted in the actual or perceived failure or financial difficulties of many financial institutions, including, but not limited to, the bankruptcy filing by Lehman Brothers Holdings Inc. and its various affiliates. If an option counterparty becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at that time under our transactions with the option counterparty. Our exposure will depend on many factors but, generally, the increase in our exposure will be correlated to the increase in the market price and in the volatility of our Class A common stock. In addition, upon a default by an option counterparty, we may suffer adverse tax consequences and more dilution than we currently anticipate with respect to our Class A common stock. We can provide no assurances as to the financial stability or viability of any option counterparty.

From time to time a portion of our investment portfolio may be invested in securities that have limited liquidity and may not be immediately accessible to support our financing needs.

From time to time a portion of our investment portfolio may be invested in strategic investments, and as a result, a portion of our portfolio may have restricted liquidity. If the credit ratings of these securities deteriorate or there is a lack of liquidity in the marketplace, we may be required to record impairment charges. Moreover, the uncertainty of domestic and global financial markets can greatly affect the volatility and value of our marketable investment securities. In addition, a portion of our investment portfolio may include strategic and financial investments in debt and equity securities of public companies that are highly speculative and that may experience volatility. Typically, these investments are concentrated in a small number of companies. The fair value of these investments can be significantly impacted by the risk of adverse changes in securities markets generally, as well as risks related to the performance of the companies whose securities we have invested in, risks associated with specific industries, and other factors. These investments are subject to significant fluctuations in fair value due to the volatility of the securities markets and of the underlying businesses. The concentration of these investments as a percentage of our overall investment portfolio fluctuates from time to time based on, among other things, the size of our investment portfolio and our ability to liquidate these investments.

In addition, because our portfolio may be concentrated in a limited number of companies, we may experience a significant loss if any of these companies, among other things, defaults on its obligations, performs poorly, does not generate adequate cash flow to fund its operations, is unable to obtain necessary financing on acceptable terms, or at all, or files for bankruptcy, or if the sectors in which these companies operate experience a market downturn. To the extent we require access to funds, we may need to sell these securities under unfavorable market conditions, record impairment charges and fall short of our financing needs.

Covenants in our and our subsidiaries' Indentures restrict our business in many ways.

There are restrictive covenants in our and our subsidiaries' Indentures that restrict us and our subsidiaries (as applicable), under certain circumstances, from taking certain actions such as, among other things:

- incur additional debt;
- allow to exist certain restrictions on certain subsidiaries' ability to pay dividends, make distributions, make other payments or transfer assets;
- restrict our ability to make investments or make other payments in respect of our equity securities or our other indebtedness;
- limit our ability to incur indebtedness that is senior to, equal or subordinate to certain Indebtedness, or to engage in certain sale/leaseback transactions;
- enter into certain transactions with affiliates;
- merge or consolidate with another company;
- restrict our ability to repurchase or prepay any other of our securities or other indebtedness; and
- restrict our ability to enter into highly leveraged transactions.

Our ability to, among other things, recapitalize, incur additional debt, secure existing or future debt or take a number of other actions may be limited by the terms of the our Indentures, business and tax considerations and legal restrictions, including, but not limited to, repurchasing indebtedness or capital stock or paying dividends, and could have the effect of diminishing our ability to make payments on our outstanding Indebtedness when due.

Risks Related to the Regulation of Our Business

Our services depend on FCC licenses that can expire or be revoked or modified and applications for FCC licenses that may not be granted.

If the FCC were to cancel, revoke, suspend, restrict, significantly condition, or fail to renew any of our licenses or authorizations, or fail to grant our applications for FCC licenses that we may file from time to time, it could have a material adverse effect on our business, financial condition and results of operations. As an example, a loss of a frequency authorization would reduce the amount of spectrum available to us, potentially reducing the amount of DISH TV, Wireless, and/or Broadband and Satellite Services offerings available to our DISH TV, Wireless, and/or Broadband and Satellite Services subscribers. The materiality of such a loss of authorizations would vary based upon, among other things, the location of the frequency used, or the availability of replacement spectrum. In addition, Congress and other Administrative and Regulatory agencies often consider and enact legislation that affects us and FCC proceedings to implement the Communications Act and enforce its regulations are ongoing. We cannot predict the outcomes of these legislative or regulatory proceedings or their effect on our business.

Wireless services and our Wireless spectrum licenses are subject to regulation by the FCC and, depending on the jurisdiction, other federal, state and local, as well as international, governmental authorities and regulatory agencies, including, among other things, regulations governing the licensing, construction, operation, sale and interconnection arrangements of wireless telecommunications systems. In particular, the FCC imposes significant regulation on licensees of wireless spectrum with respect to, among others, how radio spectrum is used by licensees, the nature of the services that licensees may offer and how the services may be offered, and resolution of issues of interference between spectrum bands. The FCC grants wireless licenses for terms of generally 10-12 years that are subject to renewal or revocation.

There can be no assurances that our Wireless spectrum licenses will be renewed. Failure to comply with FCC build-out requirements in a given license area may result in acceleration of other build-out requirements or in the modification, cancellation, or non-renewal of licenses. See Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Changes in levels of U.S. government spending or overall spending priorities could impact, among other things, our business, financial condition and results of operations.

We derive a portion of our revenue from subscribers who receive benefits under the Affordable Connectivity Program ("ACP"), an FCC benefit program that helps ensure that households can afford access to broadband. Levels of U.S. government spending are very difficult to predict and may be impacted by numerous factors such as, among others, the political environment, macroeconomic conditions and the ability of the U.S. government to enact relevant legislation such as authorization and appropriations bills.

Discontinuation, amendment or repeal of ACP, or replacement of ACP with one having different eligibility requirements and/or funding levels could negatively impact, among other things, our net Wireless subscriber activations, which may impact our decision to continue to participate in the program. We cannot predict whether or when any future changes to the ACP may occur, or whether or to what extent those changes may affect our operations or impose additional costs on our business. In addition, the timing of any changes or modifications to ACP could affect our operations and results of operations. For example, a temporary lapse in funding for ACP, as a result of, among other things, temporary government shutdown, could, among other things, result in lower net Wireless subscriber activations, even if ACP is ultimately fully funded and approved.

In particular, reduced government funding for benefits programs such as ACP would result in a reduction in reimbursements to us. Amendments to or repeal of ACP in whole or in part and/or decisions by the FCC could affect us and the manner in which we are reimbursed by such programs, all of which could materially and adversely affect our business, results of operations and financial condition. Following the FCC's announcement, ACP stopped accepting new applications and enrolments on February 7, 2024. Barring congressional action to fund ACP, funding may run out as soon as April 2024.

The risk of non-compliance with laws and regulations, including, but not limited to, the risk of changes to laws and regulations, could adversely affect our business.

Our business is regulated by numerous governmental agencies and other regulatory bodies, both domestically and internationally. Also, our international operations are subject to the laws and regulations of many different jurisdictions that may differ significantly from U.S. laws and regulations. Violations of these laws and regulations could result in fines or penalties or other sanctions which could have a material adverse impact on our business. Additionally, our ability to operate and grow our business depends on laws and regulations that govern the frequency bands and/or orbital locations we operate in or may operate in in the future.

These laws and regulations are subject to the administrative and political process and do change from time to time. Our business could suffer a material adverse impact if laws and regulations change and we are not able to adapt to these changes efficiently.

If our internal controls are not effective, our business, our stock price and investor confidence in our financial results may be adversely affected.

We periodically evaluate and test our internal control over financial reporting to satisfy the requirements of Section 404 of the Sarbanes-Oxley Act. Our management has concluded that our internal control over financial reporting was effective as of December 31, 2023. We depend on our third-party vendors' internal controls and rely on these controls when evaluating the effectiveness of our internal controls. If in the future we are unable to report that our internal control over financial reporting is effective (or if our auditors do not agree with our assessment of the effectiveness of, or are unable to express an opinion on, our internal control over financial reporting), investors, subscribers and business partners could lose confidence in the accuracy of our financial reports, which could in turn have a material adverse effect on our business.

Risks Related to Ownership of our Common Stock

We are controlled by one principal stockholder who is our Chairman.

Charles W. Ergen, our Chairman, beneficially owns approximately 54% of our total equity securities (assuming conversion of the Class B common stock beneficially owned by Mr. Ergen into Class A common stock and giving effect to the exercise of options held by Mr. Ergen that are either currently exercisable as of, or may become exercisable within 60 days after, February 27, 2023) and beneficially owns approximately 91.4% of the total voting power of all classes of shares (assuming no conversion of any Class B common stock and giving effect to the exercise of options held by Mr. Ergen that are either currently exercisable as of, or may become exercisable within 60 days after, February 27, 2023). Through his beneficial ownership of our equity securities, Mr. Ergen has the ability to elect a majority of our directors and to control all other matters requiring the approval of our stockholders. As a result of Mr. Ergen's voting power, we are a "controlled company" as defined in the NASDAQ listing rules and, therefore, are not subject to NASDAQ requirements that would otherwise require us to have (i) a majority of independent directors; (ii) a nominating committee composed solely of independent directors; (iii) compensation of our executive officers determined by a majority of the independent directors or a compensation committee composed solely of independent directors; (iv) a compensation committee charter which provides the compensation committee with the authority and funding to retain compensation consultants and other advisors; and/or (v) director nominees selected, or recommended for the Board of Directors selection, either by a majority of the independent directors or a nominating committee composed solely of independent directors.

Pursuant to the Amended Support Agreement (which was signed as part of the Merger), Mr. Ergen and the other Ergen Stockholders have agreed not to vote, or cause or direct to be voted, the shares of EchoStar Class A Common Stock owned by them, other than with respect to any matter presented to the holders of EchoStar Class A Common Stock on which holders of EchoStar Class B Common Stock are not entitled to vote, for three years following the closing of the Merger, such that the Ergen Stockholders' voting power of EchoStar will be approximately 90.4% for such three-year period.

In addition, pursuant to the Amended Support Agreement, EchoStar and the Ergen Stockholders entered into the Registration Rights Agreement reasonably providing for the registration of the Ergen Stockholders' shares of EchoStar Class A Common Stock or EchoStar Class B Common Stock received as part of the merger consideration and/or EchoStar Class B Common Stock held by such stockholders immediately prior to the closing of the Merger, at EchoStar's sole cost and expense.

It may be difficult for a third party to acquire us, even if doing so may be beneficial to our shareholders, because of our capital structure.

Certain provisions of our articles of incorporation and bylaws may discourage, delay or prevent a change in control of our Company that a shareholder may consider favorable. These provisions include the following:

- a capital structure with multiple classes of common stock: a Class A that entitles the holders to one vote per share; a Class B that entitles the holders to ten votes per share; a Class C that entitles the holders to one vote per share, except upon a change in control of our company in which case the holders of Class C are entitled to ten votes per share; and a non-voting Class D;
- a provision that authorizes the issuance of "blank check" preferred stock, which could be issued by our Board of Directors to increase the number of outstanding shares and thwart a takeover attempt;
- a provision limiting who may call special meetings of shareholders; and
- a provision establishing advance notice requirements for nominations of candidates for election to our Board of Directors or for proposing matters that can be acted upon by shareholders at shareholder meetings.

As discussed above, Mr. Ergen beneficially owns approximately 54% of our total equity securities and approximately 91.4% of the total voting power of all classes of shares and such ownership may make it impractical for any third party to obtain control of us.

In addition, pursuant to our articles of incorporation we have a significant amount of authorized and unissued stock that would allow our Board of Directors to issue shares to persons friendly to current management, thereby protecting the continuity of management, or which could be used to dilute the stock ownership of persons seeking to obtain control of us.

General Risks

Our articles of incorporation designate the Eighth Judicial District Court of Clark County of the State of Nevada as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, employees or agents.

Any person purchasing or otherwise acquiring any interest in any shares of our capital stock shall be deemed to have notice of and to have consented to this provision of our articles of incorporation. This choice of forum provision may limit our stockholders' ability to bring certain claims, including, but not limited to, claims against our directors, officers or employees, in a judicial forum that the stockholder finds favorable and therefore the choice of forum provision may discourage lawsuits or increase costs with respect to such claims.

We may face other risks described from time to time in periodic and current reports we file with the SEC.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 1C. CYBERSECURITY

We recognize the importance of assessing, identifying, reviewing and managing material risks associated with cybersecurity threats, as such term is defined in Item 106(a) of Regulation S-K. These risks include, among other things: operational and legal risks including intellectual property theft or loss, fraud, extortion, harm to employees or customers and violation of data privacy or security laws. Our framework is informed in part by the National Institute of Standards and Technology (NIST) Cybersecurity Framework, although this does not imply that we meet all technical standards, specifications or requirements under NIST.

We have an enterprise-wide information security program designed to identify, protect against, detect, respond to, and recover from cybersecurity risks, threats and events. Our cyber risk management system contributes significantly to the overall resilience and integrity of our business by, among other things, integrating the risk identification process in all major company initiatives and deployment processes, implementing a unified approach to managing both digital and traditional business risks, making continuous improvements and regularly reporting to management and the Board of Directors as a whole to ensure accountability.

We regularly assess risks from cybersecurity and technology threats and monitor our information systems for potential vulnerabilities. We and certain third parties conduct regular reviews and tests of our information security program and also leverage, among other things, audits, tabletop exercises, penetration and vulnerability testing, red team exercises, simulations and other exercises to evaluate the effectiveness of our information security program and improve our security measures and planning. In addition, we evaluate third-party risks and perform third-party risk management to assess, identify and mitigate risks from third parties such as vendors, suppliers and other business partners.

We have experienced cyber-attacks or other malicious activities that disrupted our business in the past. Any future failure or disruption of our information technology infrastructure and communications systems or those of third parties that we use in our operations could harm our business in the future. On February 23, 2023, DISH Network experienced a network outage that affected its internal servers and IT telephony. We immediately activated our incident response and business continuity plans designed to contain, remediate and recover from the situation. We engaged the services of certain cyber-security experts and outside advisors to assist in the evaluation of the situation, and once we determined that the outage was due to a cybersecurity incident, we promptly notified appropriate law enforcement authorities. In addition, on February 28, 2023, we further disclosed that certain data had been extracted from the DISH Network IT systems.

After investigation and discussions with certain third parties, we determined that our customer databases were not accessed, however, we confirmed that certain employee-related records as well as a limited number of other records containing certain personal information were among the data extracted. We took steps to protect the affected records, received confirmation that the extracted data was deleted and notified individuals whose data was extracted.

The DISH TV, SLING TV and Retail Wireless services, along with our wireless and data networks remained operational at all times during the incident. As of March 31, 2023, all significant systems had been restored. We have no reason to believe that this cybersecurity incident has not been concluded.

We describe whether and how risks from identified cybersecurity threats, including, but not limited to, as a result of any previous cybersecurity incidents, have materially affected or are reasonably likely to materially affect us, including our business strategy, results of operations or financial condition included as part of our risk factor disclosures at Item 1A of this Annual Report on Form 10-K.

The Chief Information Security Officer ("CISO") leads our information security organization responsible for overseeing our information security program. Our CISO has over 25 years of experience in various roles involving information security, including risk management and security leadership. Team members who support our information security program have relevant education, professional certifications and industry experience, including but not limited to, holding similar positions at large technology companies. The team provides regular reports, no less frequently than monthly, to senior management and other relevant teams, including, but not limited to, the Chief Executive Officer ("CEO"), Chief Operating Officer ("COO"), Chief Information Officer ("CIO") and Chief Legal Officer ("CLO").

Preparation for and, where possible prevention of cybersecurity incidents involves regular and structured briefings to key management on risk remediation measures that should be taken to decrease, among other things, the likelihood and severability of incidents and to mitigate and manage their effects. The CEO, COO, CIO, CLO and other members of management receive detailed updates on cybersecurity risks on a regular basis, no less frequently than monthly, or when significant risks or incidents are identified. These briefings enable the management team to, among other things, stay informed of the latest threats, assess the effectiveness of current security measures and make timely decisions on strategic security initiatives. In addition, the Board of Directors is regularly briefed, no less frequently than quarterly, on cybersecurity risks as part of its oversight functions and to ensure that cybersecurity practices align with the company's overall risk management framework and business objectives.

In connection with the Integration, we anticipate that we will continue to evaluate and address as needed our cyber security risk management, policies, structure, strategies and governance to meet our needs.

Item 2. PROPERTIES

The following table sets forth certain information concerning our principal properties related to our business segments.

`	Segment(s) Using Property	Owned	Leased
Corporate headquarters, Englewood, Colorado	All	X	
General offices, Littleton, Colorado	Retail Wireless/5G Network Deployment	X	
General offices, engineering offices, network operations and shared hubs, Germantown, Maryland	Broadband and Satellite Services	X	
General offices and warehouse, Griesheim, Germany	Broadband and Satellite Services	X	
Customer call center, warehouse, service, and remanufacturing center, El Paso, Texas	Pay-TV	X	
Data center, gateways, equipment and operations, Cheyenne, Wyoming	Pay-TV/5G Network Deployment/Broadband and Satellite Services	X	
Digital broadcast operations center, Cheyenne, Wyoming	Pay-TV	X	
Digital broadcast operations center and gateways, Gilbert, Arizona	Pay-TV/Broadband and Satellite Services	X	
Engineering offices and service center, Englewood, Colorado	Pay-TV	X	
Warehouse, Denver, Colorado	Pay-TV	X	
Warehouse and distribution center, Spartanburg, South Carolina	Pay-TV/5G Network Deployment		X
Warehouse and distribution center, Denver, Colorado	Pay-TV/5G Network Deployment		X
Warehouse and distribution center, Atlanta, Georgia	Pay-TV/5G Network Deployment		X

In addition to the principal properties listed above, we operate numerous facilities for, among other things, our in-home service operations, customer call centers, digital broadcast operations centers strategically located in regions throughout the United States, manufacturing and testing facilities, shared hubs, regional network management centers and backup network operation and control centers. We also have several general offices in foreign countries. Furthermore, our Pay-TV segment owns or leases capacity on nine satellites, which are a major component of our DISH TV services and our Broadband and Satellite Services segment currently owns or leases capacity on nine satellites, which are a major component of the Broadband and Satellite Services segment. See Note 8 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Item 3. LEGAL PROCEEDINGS

See Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for information regarding certain legal proceedings in which we are involved.

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

Market Information

Our Class A common stock is quoted on the Nasdaq Global Select Market under the symbol "SATS." As of February 27, 2024, there were approximately 8,660 holders of record of our Class A common stock, not including stockholders who beneficially own Class A common stock held in nominee or street name. As of February 27, 2024, all of the 131,348,468 outstanding shares of our Class B common stock were beneficially held by Charles W. Ergen, our Chairman, and by certain entities established by Mr. Ergen for the benefit of his family. There is currently no trading market for our Class B common stock.

Dividends

We have not paid any cash dividends on our common stock in the past two years. We currently do not intend to declare dividends on our common stock. Payment of any future dividends will depend upon our earnings, capital requirements, contractual restrictions and other factors the Board of Directors considers appropriate. Our ability to declare dividends is affected by the covenants in our subsidiary's indentures. See Note 10 to the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Securities Authorized for Issuance Under Equity Compensation Plans

See "*Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters*" in this Annual Report on Form 10-K.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

The following table provides information regarding purchases of our Class A common stock made by us for the period from October 1, 2023 through December 31, 2023.

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Programs	Maximum Approximate Dollar Value of Shares that May Yet be Purchased Under the Programs (1)
	(In thousands, except share data)			
October 1, 2023 - October 31, 2023	—	$ —	—	$ 500,000
November 1, 2023 - November 30, 2023	—	$ —	—	$ 500,000
December 1, 2023 - December 31, 2023	—	$ —	—	$ 500,000
Total	—	$ —	—	$ 500,000

(1) Our Board of Directors previously authorized stock repurchases of up to $500 million of our outstanding Class A common stock through and including December 31, 2023. On October 20, 2022, our Board of Directors extended this authorization to repurchase up to $500 million of our outstanding Class A common stock through and including December 31, 2023. Purchases under our repurchase program may be made through open market purchases, privately negotiated transactions, or Rule 10b5-1 trading plans, subject to market conditions and other factors. We may elect not to purchase the maximum amount of shares allowable under this program and we may also enter into additional share repurchase programs authorized by our Board of Directors. This program expired December 31, 2023.

Item 6. [RESERVED]

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

You should read the following management's discussion and analysis of our financial condition and results of operations together with the audited consolidated financial statements and notes to our financial statements included elsewhere in this Annual Report on Form 10-K. This management's discussion and analysis is intended to help provide an understanding of our financial condition, changes in financial condition and results of our operations and contains forward-looking statements that involve risks and uncertainties. The forward-looking statements are not historical facts, but rather are based on current expectations, estimates, assumptions and projections about our industry, business and future financial results. Our actual results could differ materially from the results contemplated by these forward-looking statements due to a number of factors, including those discussed under the caption "Item 1A. Risk Factors" and elsewhere in this Annual Report on Form 10-K. Furthermore, such forward-looking statements speak only as of the date of this Annual Report on Form 10-K and we expressly disclaim any obligation to update any forward-looking statements.

Overview

Recent Developments

Merger with DISH Network

On December 31, 2023, we completed the Merger with DISH Network. On the terms and subject to the conditions set forth in the Amended Merger Agreement, on December 31, 2023 at the Effective Time each share of DISH Network Common Stock outstanding immediately prior to the Effective Time, was converted into the right to receive a number of validly issued, fully paid and non-assessable shares of EchoStar Common Stock equal to the Exchange Ratio. Any shares of DISH Network Common Stock that were held in DISH Network's treasury or held directly by us or Merger Sub immediately prior to the Effective Time were cancelled and cease to exist and no consideration was paid in respect thereof. All shares of the DISH Network Class A Common Stock were delisted from NASDAQ and deregistered under the Securities Exchange Act of 1934, as amended.

The EchoStar Common Stock issued to the Ergen DISH Stockholders (as defined in the Amended Merger Agreement) as Merger consideration was issued through a private placement exemption from registration under the Securities Act. At the Effective Time, each share of DISH Network Class A Common Stock owned by the Ergen DISH Stockholders immediately prior to the Effective Time was converted into the right to receive a number of shares of EchoStar Class A Common Stock equal to the Exchange Ratio, and (b) each share of DISH Network Class B Common Stock owned by the Ergen DISH Stockholders immediately prior to the Effective Time was converted into the right to receive a number of shares of EchoStar Class B Common Stock equal to the Exchange Ratio.

Concurrently with the entry into the Amended Merger Agreement, the Ergen Stockholders, we and DISH Network entered into the Amended Support Agreement.

In connection with the completion of the Merger, on December 31, 2023, we and the Ergen Stockholders entered into the Registration Rights Agreement. See Note 1 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

For more information and a copy of the Amended Merger Agreement, the Amended Support Agreement and the Registration Rights Agreement, see the Form 8-K of EchoStar Corporation filed on October 3, 2023 and the Form 8-K of EchoStar Corporation filed on January 2, 2024.

With the Merger complete, we are currently focused on the Integration.

Segments

We currently operate four primary business segments: (1) Pay-TV; (2) Retail Wireless; (3) 5G Network Deployment; and (4) Broadband and Satellite Services.

Our Pay-TV segment business strategy is to be the best provider of video services in the United States by providing products with the best technology, outstanding customer service, and great value. We offer Pay-TV services under the DISH® brand and the SLING® brand. We promote our Pay-TV services by providing our subscribers with a better "price-to-value" relationship and experience than those available from other subscription television service providers. We market our SLING TV services to consumers who do not subscribe to traditional satellite and cable pay-TV services, as well as to current and recent traditional pay-TV subscribers who desire a lower cost alternative.

Our Retail Wireless segment offers Retail Wireless services as well as a competitive portfolio of wireless devices. We offer customers value by providing choice and flexibility in our Retail Wireless services. We offer competitive consumer plans with no annual service contracts. Our Retail Wireless business strategy is to expand our current target segments and profitably grow our subscriber base by acquiring and retaining high quality subscribers while we continue our 5G Network Deployment. We intend to acquire high quality subscribers by providing competitive offers, choice and outstanding customer service that better meet those subscribers' needs and budget.

We are currently operating our Retail Wireless segment primarily as a MVNO as we continue our 5G Network Deployment and commercialize our 5G Network. We are transitioning our Retail Wireless segment to a MNO as our 5G Network becomes commercially available and we are currently activating subscribers onto our 5G Network in markets where we have reached VoNR. As an MVNO, today we depend on T-Mobile and AT&T to provide us with network services under the MNSA and the NSA, respectively. Under the NSA, we expect AT&T will become our primary network services provider.

Our 5G Network Deployment segment business strategy is to commercialize our Wireless spectrum licenses through the completion of our 5G Network Deployment. We have committed to deploy our 5G Network capable of serving increasingly larger portions of the U.S. population at different deadlines, including 20% of the U.S. population by June 2022 and 70% of the U.S. population by June 2023. If by June 2023, we are offering 5G broadband service to at least 50% of the U.S. population but less than 70% of the U.S. population, the 70% June 2023 deadline will be extended automatically to June 2025; however, as a result, we may, under certain circumstances, potentially be subject to certain penalties. On June 14, 2022, we announced we had successfully reached our 20% population coverage requirement. In addition, we announced and certified to the FCC that as of June 14, 2023, we offer 5G broadband service to over 73% of the U.S. population, or more than 246 million Americans nationwide. On September 29, 2023, the FCC confirmed we have met all of our June 14, 2023 band-specific 5G deployment commitments, and two of our three nationwide 5G commitments. The single remaining 5G commitment, that at least 70% of the U.S. population has access to average download speeds equal to 35 Mbps, will be confirmed using the drive test methodology agreed to and approved by the FCC. We have six months from September 29, 2023 to complete this drive test. We now have the largest commercial deployment of 5G VoNR in the world reaching approximately 200 million Americans and 5G broadband service reaching approximately 250 million Americans.

As a result of us providing 5G broadband service to over 50% of the U.S. population by June 14, 2023, the final build-out deadlines have been extended automatically to June 14, 2025 for us to offer 5G broadband service to at least 70% of the population in each Economic Area for the 700 MHz Licenses and AWS-4 Licenses and at least 75% of the population in each Economic Area for the H Block Licenses.

Our Broadband and Satellite Services segment business strategy is to maintain and improve our leadership position and competitive advantage through development of leading-edge technologies and services marketed to selected sectors within the consumer, enterprise and government markets globally. Within our Broadband and Satellite Services segment we are an industry leader in both networking technologies and services, innovating to deliver the global solutions that power a connected future for people, enterprises and things everywhere. We provide broadband services to consumer customers, which include home and small to medium-sized businesses, and satellite, multi-transport technologies and managed network services to enterprise customers, telecommunications providers, aeronautical service providers and government entities, including civilian and defense. Our EchoStar XXIV satellite began service in December 2023, bringing additional broadband capacity across North and South America and is expected to be an integral part of our satellite service business. We will leverage EchoStar XXIV to deliver satellite services to unserved and underserved consumer markets in the Americas as well as enterprise and government markets.

Other Developments

Cybersecurity Incident

On February 23, 2023, DISH Network experienced a network outage that affected its internal servers and IT telephony. We immediately activated our incident response and business continuity plans designed to contain, remediate and recover from the situation. We engaged the services of certain cyber-security experts and outside advisors to assist in the evaluation of the situation, and once we determined that the outage was due to a cybersecurity incident, we promptly notified appropriate law enforcement authorities.

On February 28, 2023, we further disclosed that certain data had been extracted from the DISH Network IT systems. Our investigation into the extent of the incident is now completed. We determined that our customer databases were not accessed, however, we confirmed that certain employee-related records as well as a limited number of other records containing certain personal information were among the data extracted. We took steps to protect the affected records, received confirmation that the extracted data was deleted and notified individuals whose data was extracted.

The DISH TV, SLING TV and Retail Wireless services, along with our wireless and data networks remained operational at all times during the incident. As of March 31, 2023, all significant systems had been restored.

During the first quarter of 2023, we incurred substantially all of our cyber-security-related expenses for this matter, including, but not limited to, costs to remediate the incident and provide additional customer support. During the second, third and fourth quarters of 2023, we did not incur additional material expenses resulting from the cyber-security incident and do not expect to incur material expenses in future periods. During the year ended December 31, 2023, we incurred approximately $30 million in cyber-security-related expenses, which are recorded in “Cost of services” on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Economic Environment

During 2022 and 2023, we experienced significant inflationary pressures in our commodity and labor costs resulting from the macroeconomic environment in the United States, which has significantly impacted our overall operating results.

EXPLANATION OF KEY METRICS AND OTHER ITEMS

Service revenue. “Service revenue” consists principally of Pay-TV and Wireless subscriber revenue, broadband services, maintenance and other contracted revenue and satellite and transponder leases and services revenue. Certain of the amounts included in “Service revenue” are not recurring on a monthly basis.

Equipment sales and other revenue. “Equipment sales and other revenue” principally includes the sale of wireless devices, the non-subsidized sales of Pay-TV equipment, the licensing of certain intellectual property and sales of broadband equipment and networks sold both in our consumer and enterprise markets.

Cost of services. "Cost of services" principally includes Pay-TV programming expenses and other operating costs related to our Pay-TV segment, costs of Wireless services (including costs incurred under the MNSA and NSA), and costs of broadband services, maintenance and other contracted services and costs associated with satellite and transponder leases and services.

Cost of sales - equipment and other. "Cost of sales – equipment and other" principally includes the cost of wireless devices and other related items, certain direct costs of wireless mobile network operations to deliver wireless voice and data services, the cost of broadband equipment and networks, as well as costs related to the non-subsidized sales of Pay-TV equipment. Costs are generally recognized as products are delivered to customers and the related revenue is recognized.

Selling, general and administrative expenses. "Selling, general and administrative expenses" consists primarily of direct sales costs, advertising and selling costs, third-party commissions related to the acquisition of subscribers and employee-related costs associated with administrative services such as legal, information systems, and accounting and finance. In addition, "Selling, general and administrative expenses" includes costs related to the installation of equipment for our new Pay-TV subscribers and the cost of subsidized sales of Pay-TV equipment for new subscribers.

Impairment of long-lived assets and goodwill. "Impairment of long-lived assets and goodwill" includes our impairment losses related to our property and equipment, regulatory authorizations, goodwill and other intangible assets.

Interest expense, net of amounts capitalized. "Interest expense, net of amounts capitalized" primarily includes interest expense associated with our long-term debt (net of capitalized interest), prepayment premiums, amortization of debt discounts and debt issuance costs associated with our long-term debt, and interest expense associated with our finance lease obligations.

Other, net. The main components of "Other, net" are gains and losses realized on the sale and/or conversion of marketable and non-marketable investment securities and derivative instruments, impairment of marketable and non-marketable investment securities, unrealized gains and losses from changes in fair value of certain marketable and non-marketable investment securities and derivative instruments, foreign currency transaction gains and losses, and equity in earnings and losses of our affiliates.

Earnings before interest, taxes, depreciation and amortization ("EBITDA"). EBITDA is defined as "Net income (loss) attributable to EchoStar" plus "Interest expense, net of amounts capitalized" and net of "Interest income," "Income tax (provision) benefit, net" and "Depreciation and amortization." This "non-GAAP measure" is reconciled to "Net income (loss) attributable to EchoStar" in our discussion of "Results of Operations" below.

Operating income before depreciation and amortization ("OIBDA"). OIBDA is defined as "Operating income (loss)" plus "Depreciation and amortization." This "non-GAAP measure" is reconciled to "Operating income (loss)" in our discussion of "Results of Operations" below.

DISH TV subscribers. We include customers obtained through direct sales, independent third-party retailers and other independent third-party distribution relationships in our DISH TV subscriber count. We also provide DISH TV services to hotels, motels and other commercial accounts. For certain of these commercial accounts, we divide our total revenue for these commercial accounts by $34.99, and include the resulting number, which is substantially smaller than the actual number of commercial units served, in our DISH TV subscriber count.

SLING TV subscribers. We include customers obtained through direct sales and third-party marketing agreements in our SLING TV subscriber count. SLING TV subscriber additions are recorded net of disconnects. SLING TV customers receiving service for no charge, under certain new subscriber promotions, are excluded from our SLING TV subscriber count. For customers who subscribe to multiple SLING TV packages, each customer is only counted as one SLING TV subscriber.

Pay-TV subscribers. Our Pay-TV subscriber count includes all DISH TV and SLING TV subscribers discussed above. For customers who subscribe to both our DISH TV services and our SLING TV services, each subscription is counted as a separate Pay-TV subscriber.

Pay-TV average monthly revenue per subscriber ("Pay-TV ARPU"). We are not aware of any uniform standards for calculating ARPU and believe presentations of ARPU may not be calculated consistently by other companies in the same or similar businesses. We calculate Pay-TV average monthly revenue per Pay-TV subscriber, or Pay-TV ARPU, by dividing average monthly Pay-TV segment "Service revenue," excluding revenue from broadband services, for the period by our average number of Pay-TV subscribers for the period. The average number of Pay-TV subscribers is calculated for the period by adding the average number of Pay-TV subscribers for each month and dividing by the number of months in the period. The average number of Pay-TV subscribers for each month is calculated by adding the beginning and ending Pay-TV subscribers for the month and dividing by two. SLING TV subscribers on average purchase lower priced programming services than DISH TV subscribers, and therefore, as SLING TV subscribers increase as a percentage of total Pay-TV subscribers, it has had a negative impact on Pay-TV ARPU.

DISH TV average monthly subscriber churn rate ("DISH TV churn rate"). We are not aware of any uniform standards for calculating subscriber churn rate and believe presentations of subscriber churn rates may not be calculated consistently by different companies in the same or similar businesses. We calculate our DISH TV churn rate for any period by dividing the number of DISH TV subscribers who terminated service during the period by the average number of DISH TV subscribers for the same period, and further dividing by the number of months in the period. The average number of DISH TV subscribers is calculated for the period by adding the average number of DISH TV subscribers for each month and dividing by the number of months in the period. The average number of DISH TV subscribers for each month is calculated by adding the beginning and ending DISH TV subscribers for the month and dividing by two.

DISH TV SAC. Subscriber acquisition cost measures are commonly used by those evaluating traditional companies in the pay-TV industry. We are not aware of any uniform standards for calculating the "average subscriber acquisition costs per new DISH TV subscriber activation," or DISH TV SAC, and we believe presentations of pay-TV SAC may not be calculated consistently by different companies in the same or similar businesses. Our DISH TV SAC is calculated using all costs of acquiring DISH TV subscribers (e.g., subsidized equipment, advertising, installation, commissions and direct sales, etc.) which are included in "Selling, general and administrative expenses," plus capitalized payments made under certain sales incentive programs and the value of equipment capitalized under our lease program for new DISH TV subscribers, divided by gross new DISH TV subscriber activations. We include all new DISH TV subscribers in our calculation, including DISH TV subscribers added with little or no subscriber acquisition costs.

Wireless subscribers. We include prepaid and postpaid customers obtained through direct sales, independent third-party retailers and other independent third-party distribution relationships in our Wireless subscriber count. Our Wireless subscriber count includes all ACP/Gen Mobile subscribers discussed below. Our gross new Wireless subscriber activations exclude all ACP/Gen Mobile subscribers as we record these subscribers net of disconnects, as discussed below.

Affordable Connectivity Program/Gen Mobile subscribers ("ACP/Gen Mobile subscribers"). The Emergency Broadband Benefit Program ("EBBP") was launched by the FCC in February of 2021 to support broadband services and devices to help low-income individuals that meet certain eligibility criteria. The Affordable Connectivity Program ("ACP") replaced the EBBP on December 31, 2021. Our ACP/Gen Mobile subscribers have a significantly higher churn rate compared to our other Wireless subscribers and we incur lower costs to acquire these subscribers. Therefore, our ACP/Gen Mobile subscriber additions are recorded net of disconnects.

Wireless average monthly revenue per subscriber ("Wireless ARPU"). We are not aware of any uniform standards for calculating ARPU and believe presentations of ARPU may not be calculated consistently by other companies in the same or similar businesses. We calculate average monthly revenue per Wireless subscriber, or Wireless ARPU, by dividing average monthly Retail Wireless segment "Service revenue" for the period by our average number of Wireless subscribers for the period. The average number of Wireless subscribers is calculated for the period by adding the average number of Wireless subscribers for each month and dividing by the number of months in the period. The average number of Wireless subscribers for each month is calculated by adding the beginning and ending Wireless subscribers for the month and dividing by two.

Wireless average monthly subscriber churn rate ("Wireless churn rate"). We are not aware of any uniform standards for calculating subscriber churn rate and believe presentations of subscriber churn rates may not be calculated consistently by different companies in the same or similar businesses. We calculate our "Wireless churn rate" for any period by dividing the number of Wireless subscribers who terminated service during the period by the average number of Wireless subscribers for the same period, and further dividing by the number of months in the period. The average number of Wireless subscribers is calculated for the period by adding the average number of Wireless subscribers for each month and dividing by the number of months in the period. The average number of Wireless subscribers for each month is calculated by adding the beginning and ending Wireless subscribers for the month and dividing by two. ACP/Gen Mobile subscribers are excluded from our calculation of our Wireless churn rate.

Broadband subscribers. Subscribers include customers that subscribe to our HughesNet service, through retail, wholesale and small/medium enterprise service channels.

Free cash flow. We define free cash flow as "Net cash flows from operating activities" less: (i) "Purchases of property and equipment" net of "Refunds and other receipts of purchases of property and equipment," and (ii) "Capitalized interest related to Regulatory authorizations," as shown on our Consolidated Statements of Cash Flows.

RESULTS OF OPERATIONS – Segments

Business Segments

We currently operate four primary business segments: (1) Pay-TV; (2) Retail Wireless; (3) 5G Network Deployment; and (4) Broadband and Satellite Services.

Revenue and operating income (loss) by segment are shown in the table below:

Year Ended December 31, 2023 Compared to the Year Ended December 31, 2022.

	For the Years Ended December 31,		Variance	
	2023	2022	Amount	%
		(In thousands)		
Revenue:				
Pay-TV	$ 11,571,159	$ 12,505,392	$ (934,233)	(7.5)
Retail wireless	3,692,372	4,135,129	(442,757)	(10.7)
5G network deployment	91,928	65,768	26,160	39.8
Broadband and satellite services	1,755,559	1,998,093	(242,534)	(12.1)
Eliminations	(95,420)	(70,136)	(25,284)	(36.0)
Total revenue	$ 17,015,598	$ 18,634,246	$ (1,618,648)	(8.7)
Operating income (loss):				
Pay-TV	$ 2,699,810	$ 2,933,898	$ (234,088)	(8.0)
Retail wireless	(643,184)	(77,264)	(565,920)	*
5G network deployment	(1,881,369)	(810,968)	(1,070,401)	*
Broadband and satellite services	(458,609)	181,615	(640,224)	*
Eliminations	5,443	5,557	(114)	(2.1)
Total operating income (loss)	$ (277,909)	$ 2,232,838	$ (2,510,747)	*

* Percentage is not meaningful.

Total revenue. Our consolidated revenue totaled $17.016 billion for the year ended December 31, 2023, a decrease of $1.619 billion or 8.7% compared to the same period in 2022. The net decrease primarily resulted from the decrease in revenue from our Pay-TV, Retail Wireless and Broadband and Satellite Service segments.

Total operating income (loss). Our consolidated operating loss totaled $278 million for the year ended December 31, 2023, compared to income of $2.233 billion during the same period in 2022. The net decrease primarily resulted from an increase in operating loss from our 5G Network Deployment and Retail Wireless segments and to a lesser extent decreases in operating income (loss) from our Broadband and Satellite Service and Pay-TV segments. The year ended December 31, 2023 was adversely impacted by impairments of goodwill of: (1) $533 million from our Broadband and Satellite Service segment; (2) $120 million from our 5G Network Deployment segment; (3) $99 million from our Retail Wireless segment; and (4) $6 million from our Pay-TV segment. See Note 2 to the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021.

	For the Years Ended December 31,		Variance	
	2022	2021	Amount	%
		(In thousands)		
Revenue:				
Pay-TV	$ 12,505,392	$ 12,928,707	$ (423,315)	(3.3)
Retail wireless	4,135,129	4,897,205	(762,076)	(15.6)
5G network deployment	65,768	73,889	(8,121)	(11.0)
Broadband and satellite services	1,998,093	1,985,720	12,373	0.6
Eliminations	(70,136)	(66,843)	(3,293)	(4.9)
Total revenue	$ 18,634,246	$ 19,818,678	$ (1,184,432)	(6.0)
Operating income (loss):				
Pay-TV	$ 2,933,898	$ 3,075,579	$ (141,681)	(4.6)
Retail wireless	(77,264)	343,785	(421,049)	*
5G network deployment	(810,968)	(216,330)	(594,638)	*
Broadband and satellite services	181,615	209,042	(27,427)	(13.1)
Eliminations	5,557	10,328	(4,771)	(46.2)
Total operating income (loss)	$ 2,232,838	$ 3,422,404	$ (1,189,566)	(34.8)

* Percentage is not meaningful.

Total revenue. Our consolidated revenue totaled $18.634 billion for the year ended December 31, 2022, a decrease of $1.184 billion or 6.0% compared to the same period in 2021. The net decrease primarily resulted from the decrease in revenue from our Retail Wireless and Pay-TV segments.

Total operating income (loss). Our consolidated operating income totaled $2.233 billion for the year ended December 31, 2022, a decrease of $1.190 billion or 34.8% compared to the same period in 2021. The net decrease primarily resulted from an increase in operating loss from our 5G Network Deployment and decreases in operating income (loss) from our Retail Wireless and Pay-TV segments and to a lesser extent our Broadband and Satellite Services segment.

Pay-TV Segment

We offer Pay-TV services under the DISH brand and the SLING brand. As of December 31, 2023, we had 8.526 million Pay-TV subscribers in the United States, including 6.471 million DISH TV subscribers and 2.055 million SLING TV subscribers.

We promote our Pay-TV services by providing our subscribers with better service, technology and value than those available from other subscription television service providers. We offer a wide selection of video services under the DISH TV brand, with access to hundreds of channels depending on the level of subscription. Our standard programming packages generally include programming provided by national cable networks. We also offer programming packages that include local broadcast networks, specialty sports channels, premium movie channels and Latino and international programming. We market our SLING TV services to consumers who do not subscribe to traditional satellite and cable pay-TV services, as well as to current and recent traditional pay-TV subscribers who desire a lower cost alternative. Our SLING TV services require an Internet connection and are available on multiple streaming-capable devices including, among others, streaming media devices, TVs, tablets, computers, game consoles and phones. We offer SLING domestic, SLING International, SLING Latino and SLING Freestream video programming services.

Trends in our Pay-TV Segment

Competition

Competition has intensified in recent years as the pay-TV industry has matured. We and our competitors increasingly must seek to attract a greater proportion of new subscribers from each other’s existing subscriber bases rather than from first-time purchasers of pay-TV services. We face substantial competition from established pay-TV providers and broadband service providers and increasing competition from companies providing/facilitating the delivery of video content via the Internet to computers, televisions, and other streaming and mobile devices, including wireless service providers. In recent years, industry consolidation and convergence has created competitors with greater scale and multiple product/service offerings. These developments, among others, have contributed to intense and increasing competition, and we expect such competition to continue.

We incur significant costs to retain our existing DISH TV subscribers, generally as a result of upgrading their equipment to next generation receivers, primarily including our Hopper® receivers, and by providing retention credits. Our DISH TV subscriber retention costs may vary significantly from period to period.

Many of our competitors have been especially aggressive by offering discounted programming and services for both new and existing subscribers, including, but not limited to, bundled offers combining broadband, video and/or wireless services and other promotional offers. Certain competitors have been able to subsidize the price of video services with the price of broadband and/or wireless services.

Our Pay-TV services also face increased competition from programmers and other companies who distribute video directly to consumers over the Internet, as well as traditional satellite television providers, cable companies and large telecommunications companies that are rapidly increasing their Internet-based video offerings and direct-to-consumer exclusive and non-exclusive content. We also face competition from providers of video content, many of which are providers of programming content to us, that distribute content over the Internet including services with live-linear television programming, as well as single programmer offerings and offerings of large libraries of on-demand content, including in certain cases original content. These product offerings include, but are not limited to, Netflix, Hulu, Apple+, Prime Video, YouTube TV, Disney+, ESPN+, Paramount+, Max, STARZ, Peacock, Fubo, Philo and Tubi and certain bundles of these offerings.

Significant changes in consumer behavior regarding the means by which consumers obtain video entertainment and information in response to digital media competition could have a material adverse effect on our business, results of operations and financial condition or otherwise disrupt our business.

In particular, consumers have shown increased interest in viewing certain video programming in any place, at any time and/or on any broadband or Internet-connected device they choose. Online content providers may cause our subscribers to disconnect our DISH TV services ("cord cutting"), downgrade to smaller, less expensive programming packages ("cord shaving") or elect to purchase through these online content providers a certain portion of the services that they would have historically purchased from us.

Mergers and acquisitions, joint ventures and alliances among cable television providers, telecommunications companies, programming providers and others may result in, among other things, greater scale and financial leverage and increase the availability of offerings from providers capable of bundling video, broadband and/or wireless services in competition with our services and may exacerbate the risks described under the caption "Item 1A. Risk Factors" and elsewhere in our public filings. These transactions may affect us adversely by, among other things, making it more difficult for us to obtain access to certain programming networks on nondiscriminatory and fair terms, or at all.

Our Pay-TV subscriber base has been declining due to, among other things, the factors described above. There can be no assurance that our Pay-TV subscriber base will not continue to decline and that the pace of such decline will not accelerate. As our Pay-TV subscriber base continues to decline, it could have a material adverse long-term effect on our business, results of operations, financial condition and cash flow.

Programming

Our ability to compete successfully will depend, among other things, on our ability to continue to obtain desirable programming and deliver it to our subscribers at competitive prices. Programming costs represent a large percentage of our "Cost of services" and the largest component of our total expense. We expect these costs to continue to increase due to contractual price increases and the renewal of long-term programming contracts on less favorable pricing terms and certain programming costs are rising at a much faster rate than wages or inflation. In particular, the rates we are charged for retransmitting local broadcast channels have been increasing substantially and may exceed our ability to increase our prices to our subscribers. Our ability to provide services under these agreements and negotiate acceptable terms depends on, among other things, the number of subscribers we have, our actual, perceived or anticipated financial condition and our negotiating power against each programmer, which can vary depending on the size and scale of such programmer. Going forward, our margins may face pressure if we are unable to renew our long-term programming contracts on acceptable pricing and other economic terms or if we are unable to pass these increased programming costs on to our subscribers.

Increases in programming costs have caused us to increase the rates that we charge to our subscribers, which could in turn cause our existing Pay-TV subscribers to disconnect our services or cause potential new Pay-TV subscribers to choose not to subscribe to our services. Additionally, even if our subscribers do not disconnect our services, they may purchase through new and existing online content providers a certain portion of the services that they would have historically purchased from us.

Furthermore, our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV churn rate may be negatively impacted if we are unable to renew our long-term programming carriage contracts. In the past, our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV churn rate have been negatively impacted as a result of programming interruptions and threatened programming interruptions in connection with the scheduled expiration of programming carriage contracts with content providers. There can be no assurance that the removal of any channels will not have a material adverse effect on our business, results of operations and financial condition or otherwise disrupt our business. We cannot predict with any certainty the impact to our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV churn rate resulting from programming interruptions or threatened programming interruptions that may occur in the future. As a result, we may at times suffer from periods of lower net Pay-TV subscriber additions or higher net Pay-TV subscriber losses.

Other Developments

Adaptive Bitrate Streaming Patents

Through our subsidiaries, we hold dozens of issued United States and foreign patents that relate to Adaptive Bitrate Streaming. On September 9, 2022, the chief administrative law judge at the United States International Trade Commission ("ITC") issued an Initial Determination holding that the video streaming in certain Peloton, NordicTrack and Mirror exercise equipment infringes four of those patents, and recommended that the ITC prevent the importation of the infringing products. On March 8, 2023, the ITC issued its Final Determination, which affirmed the Initial Determination for three of the four patents in all material aspects, and issued the recommended exclusion and cease and desist orders, which will become effective after a Presidential review period. On February 9, 2023, we entered into a confidential license agreement covering Mirror exercise equipment that resolves our litigation involving those products. On May 1, 2023, we entered into a $75 million license agreement covering Peloton exercise equipment that resolves our litigation involving those products. During the year ended December 31, 2023, we recorded the $75 million license agreement in "Equipment sales and other revenue" on our Consolidated Statements of Operations and Comprehensive Income (Loss). We have not reached a settlement with respect to the NordicTrack infringing products and we intend to enforce this litigation and to pursue our related patent infringement claims against them.

RESULTS OF OPERATIONS – Pay-TV Segment

Year Ended December 31, 2023 Compared to the Year Ended December 31, 2022.

Statements of Operations Data	For the Years Ended December 31, 2023	2022	Variance Amount	%
	(In thousands)			
Revenue:				
Service revenue	$ 11,385,961	$ 12,360,601	$ (974,640)	(7.9)
Equipment sales and other revenue	185,198	144,791	40,407	27.9
Total revenue	11,571,159	12,505,392	(934,233)	(7.5)
Costs and expenses:				
Cost of services	6,977,628	7,423,427	(445,799)	(6.0)
% of Service revenue	**61.3 %**	**60.1 %**		
Cost of sales - equipment and other	91,164	97,315	(6,151)	(6.3)
Selling, general and administrative expenses	1,414,808	1,622,281	(207,473)	(12.8)
% of Total revenue	**12.2 %**	**13.0 %**		
Depreciation and amortization	381,292	428,471	(47,179)	(11.0)
Impairment of long-lived assets and goodwill	6,457	—	6,457	*
Total costs and expenses	8,871,349	9,571,494	(700,145)	(7.3)
Operating income (loss)	$ 2,699,810	$ 2,933,898	$ (234,088)	(8.0)
Other data:				
Pay-TV subscribers, as of period end (in millions)	8.526	9.750	(1.224)	(12.6)
DISH TV subscribers, as of period end (in millions)	6.471	7.416	(0.945)	(12.7)
SLING TV subscribers, as of period end (in millions)	2.055	2.334	(0.279)	(12.0)
Pay-TV subscriber additions (losses), net (in millions)	(1.224)	(0.957)	(0.267)	(27.9)
DISH TV subscriber additions (losses), net (in millions)	(0.945)	(0.805)	(0.140)	(17.4)
SLING TV subscriber additions (losses), net (in millions)	(0.279)	(0.152)	(0.127)	(83.6)
Pay-TV ARPU	$ 104.56	$ 101.20	$ 3.36	3.3
DISH TV subscriber additions, gross (in millions)	0.464	0.634	(0.170)	(26.8)
DISH TV churn rate	1.69 %	1.54 %	0.15 %	9.7
DISH TV SAC	$ 1,118	$ 1,044	$ 74	7.1
Purchases of property and equipment, net of refunds	$ 242,736	$ 131,093	$ 111,643	85.2
OIBDA	$ 3,081,102	$ 3,362,370	$ (281,268)	(8.4)

* Percentage is not meaningful.

Pay-TV Subscribers

DISH TV subscribers. We lost approximately 945,000 net DISH TV subscribers during the year ended December 31, 2023 compared to the loss of approximately 805,000 net DISH TV subscribers during the same period in 2022. This increase in net DISH TV subscriber losses primarily resulted from lower gross new DISH TV subscriber activations and a higher DISH TV churn rate.

SLING TV subscribers. We lost approximately 279,000 net SLING TV subscribers during the year ended December 31, 2023 compared to the loss of approximately 152,000 net SLING TV subscribers during the same period in 2022. The increase in net SLING TV subscriber losses were primarily related to lower SLING TV subscriber activations, partially offset by lower SLING TV subscriber disconnects in 2023. We continue to experience increased competition, including competition from other subscription video on-demand and live-linear OTT service providers, many of which are providers of our content and offer football and other seasonal sports programming direct to subscribers on an a la carte basis.

DISH TV subscribers, gross. During the year ended December 31, 2023, we activated approximately 464,000 gross new DISH TV subscribers compared to approximately 634,000 gross new DISH TV subscribers during the same period in 2022, a decrease of 26.8%. This decrease in our gross new DISH TV subscriber activations was primarily related to the lack of demand, shifting consumer behavior, and lower marketing expenditures, as well as increased competitive pressures, including, but not limited to, live-linear OTT service providers, aggressive short term introductory pricing and bundled offers combining broadband, video and/or wireless services and other discounted promotional offers, and direct-to-consumer offerings by certain of our programmers. Our gross new DISH TV subscriber activations continue to be negatively impacted by an emphasis on acquiring higher quality subscribers.

DISH TV churn rate. Our DISH TV churn rate for the year ended December 31, 2023 was 1.69% compared to 1.54% for the same period in 2022. Our DISH TV churn rate for the year ended December 31, 2023 was briefly elevated due to the cyber-security incident. Our DISH TV churn rate continues to be adversely impacted by external factors, such as, among other things, cord cutting, shifting consumer behavior and increased competitive pressures, including, but not limited to, live-linear OTT service providers, aggressive marketing, bundled discount offers combining broadband, video and/or wireless services and other discounted promotional offers. Our DISH TV churn rate continues to be positively impacted by our emphasis on acquiring and retaining higher quality subscribers. Our DISH TV churn rate is also impacted by internal factors, such as, among other things, our ability to consistently provide outstanding customer service, price increases, our ability to control piracy and other forms of fraud, and the level of our retention efforts.

Our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV churn rate have been negatively impacted as a result of programming interruptions and threatened programming interruptions in connection with the scheduled expiration of programming carriage contracts with content providers. We cannot predict with any certainty the impact to our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV subscriber churn rate resulting from programming interruptions or threatened programming interruptions that may occur in the future. As a result, we may at times suffer from periods of lower net Pay-TV subscriber additions or higher net Pay-TV subscriber losses.

We have not always met our own standards for performing high-quality installations, effectively resolving subscriber issues when they arise, answering subscriber calls in an acceptable timeframe, effectively communicating with our subscriber base, reducing calls driven by the complexity of our business, improving the reliability of certain systems and subscriber equipment and aligning the interests of certain independent third-party retailers and installers to provide high-quality service. Most of these factors have affected both gross new DISH TV subscriber activations as well as DISH TV subscriber churn rate. Our future gross new DISH TV subscriber activations and our DISH TV subscriber churn rate may be negatively impacted by these factors, which could in turn adversely affect our revenue.

Service revenue. "Service revenue" totaled $11.386 billion for the year ended December 31, 2023, a decrease of $975 million or 7.9% compared to the same period in 2022. The decrease in "Service revenue" compared to the same period in 2022 was primarily related to lower average Pay-TV subscriber base, partially offset by an increase in Pay-TV ARPU, discussed below.

Equipment sales and other revenue. "Equipment sales and other revenue" totaled $185 million for the year ended December 31, 2023, an increase of $40 million or 27.9% compared to the same period in 2022. The increase in "Equipment sales and other revenue" compared to the same period in 2022 was primarily related to a non-recurring $75 million license of our Adaptive Bitrate Streaming patents to Peloton covering certain Peloton products that resolves our litigation involving those products, partially offset by a decrease in equipment sales revenue.

Pay-TV ARPU. Pay-TV ARPU was $104.56 during the year ended December 31, 2023 versus $101.20 during the same period in 2022. The $3.36 or 3.3% increase in Pay-TV ARPU was primarily attributable to the DISH TV and SLING TV programming price increases. The DISH TV and SLING TV programming package price increases were effective in the fourth quarter of 2022 and 2023.

Cost of services. "Cost of services" totaled $6.978 billion during the year ended December 31, 2023, a decrease of $446 million or 6.0% compared to the same period in 2022. The decrease in "Cost of services" was primarily attributable to a lower average Pay-TV subscriber base, partially offset by higher programming costs per subscriber and higher variable and retention costs per subscriber. Programming costs per subscriber increased during the year ended December 31, 2023 due to rate increases in certain of our programming contracts, including the renewal of certain contracts at higher rates, particularly for local broadcast channels. In addition, variable and retention costs per subscriber increased during the year ended December 31, 2023 due to, among other things, approximately $30 million in cyber-security-related expenses to remediate the incident and provide additional customer support. "Cost of services" represented 61.3% and 60.1% of "Service revenue" during the year ended December 31, 2023 and 2022, respectively.

In the normal course of business, we enter into contracts to purchase programming content in which our payment obligations are generally contingent on the number of Pay-TV subscribers to whom we provide the respective content. Our "Cost of services" have and will continue to face further upward pressure from price increases and the renewal of long-term programming contracts on less favorable pricing terms. In addition, our programming expenses will increase to the extent we are successful in growing our Pay-TV subscriber base.

Selling, general and administrative expenses. "Selling, general and administrative expenses" totaled $1.415 billion during the year ended December 31, 2023, a $207 million or 12.8% decrease compared to the same period in 2022. This change was primarily driven by a decrease in subscriber acquisition costs resulting from lower marketing expenditures and lower gross new DISH TV subscriber activations, and a decrease in personnel costs, partially offset by Merger related costs.

Depreciation and amortization. "Depreciation and amortization" expense totaled $381 million during the year ended December 31, 2023, a $47 million or 11.0% decrease compared to the same period in 2022. This change was primarily driven by a decrease in depreciation expense from equipment leased to new and existing DISH TV subscribers and the EchoStar XI satellite which became fully depreciated during the second quarter of 2023.

Impairment of long-lived assets and goodwill. "Impairment of long-lived assets and goodwill" totaled $6 million for the year ended December 31, 2023. This impairment represents a noncash impairment charge for goodwill. See Note 2 to the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

DISH TV SAC. DISH TV SAC was $1,118 during the year ended December 31, 2023 compared to $1,044 during the same period in 2022, an increase of $74 or 7.1%. This change was primarily attributable to an increase in advertising costs per subscriber, higher installation costs due to an increase in labor and other installation costs, and a lower percentage of remanufactured receivers being activated on new subscriber accounts.

During the year ended December 31, 2023 and 2022, the amount of equipment capitalized under our lease program for new DISH TV subscribers totaled $54 million and $55 million, respectively.

To remain competitive, we upgrade or replace subscriber equipment periodically as technology changes, and the costs associated with these upgrades may be substantial. To the extent technological changes render a portion of our existing equipment obsolete, we would be unable to redeploy all returned equipment and consequently would realize less benefit from the DISH TV SAC reduction associated with redeployment of that returned lease equipment.

Our "DISH TV SAC" may materially increase in the future to the extent that we, among other things, transition to newer technologies, introduce more aggressive promotions, or provide greater equipment subsidies. See further information under *"Liquidity and Capital Resources – Subscriber Acquisition and Retention Costs."*

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021.

Statements of Operations Data	For the Years Ended December 31, 2022	2021	Variance Amount	%
	(In thousands)			
Revenue:				
Service revenue	$ 12,360,601	$ 12,787,485	$ (426,884)	(3.3)
Equipment sales and other revenue	144,791	141,222	3,569	2.5
Total revenue	12,505,392	12,928,707	(423,315)	(3.3)
Costs and expenses:				
Cost of services	7,423,427	7,735,410	(311,983)	(4.0)
% of Service revenue	**60.1 %**	**60.5 %**		
Cost of sales - equipment and other	97,315	104,941	(7,626)	(7.3)
Selling, general and administrative expenses	1,622,281	1,473,941	148,340	10.1
% of Total revenue	**13.0 %**	**11.4 %**		
Depreciation and amortization	428,471	538,836	(110,365)	(20.5)
Total costs and expenses	9,571,494	9,853,128	(281,634)	(2.9)
Operating income (loss)	$ 2,933,898	$ 3,075,579	$ (141,681)	(4.6)
Other data:				
Pay-TV subscribers, as of period end (in millions)	9.750	10.707	(0.957)	(8.9)
DISH TV subscribers, as of period end (in millions)	7.416	8.221	(0.805)	(9.8)
SLING TV subscribers, as of period end (in millions)	2.334	2.486	(0.152)	(6.1)
Pay-TV subscriber additions (losses), net (in millions)	(0.957)	(0.583)	(0.374)	(64.2)
DISH TV subscriber additions (losses), net (in millions)	(0.805)	(0.595)	(0.210)	(35.3)
SLING TV subscriber additions (losses), net (in millions)	(0.152)	0.012	(0.164)	*
Pay-TV ARPU	$ 101.20	$ 95.94	$ 5.26	5.5
DISH TV subscriber additions, gross (in millions)	0.634	0.835	(0.201)	(24.1)
DISH TV churn rate	1.54 %	1.40 %	0.14 %	10.0
DISH TV SAC	$ 1,044	$ 823	$ 221	26.9
Purchases of property and equipment, net of refunds	$ 131,093	$ 173,485	$ (42,392)	(24.4)
OIBDA	$ 3,362,370	$ 3,614,415	$ (252,045)	(7.0)

* Percentage is not meaningful.

Pay-TV Subscribers

DISH TV subscribers. We lost approximately 805,000 net DISH TV subscribers during the year ended December 31, 2022 compared to the loss of approximately 595,000 net DISH TV subscribers during the same period in 2021. This increase in net DISH TV subscriber losses primarily resulted from lower gross new DISH TV subscriber activations and a higher DISH TV churn rate.

SLING TV subscribers. We lost approximately 152,000 net SLING TV subscribers during the year ended December 31, 2022 compared to the addition of approximately 12,000 net SLING TV subscribers during the same period in 2021. The decrease in net SLING TV subscribers was primarily related to higher subscriber disconnects in 2022 following seasonal sports activity and lower SLING TV subscriber activations. We continue to experience increased competition, including competition from other subscription video on-demand and live-linear OTT service providers.

DISH TV subscribers, gross. During the year ended December 31, 2022, we activated approximately 634,000 gross new DISH TV subscribers compared to approximately 835,000 gross new DISH TV subscribers during the same period in 2021, a decrease of 24.1%. This decrease in our gross new DISH TV subscriber activations was primarily related to the lack of demand, shifting consumer behavior and channel removals, including Tegna, as well as increased competitive pressures, including aggressive short term introductory pricing and bundled offers combining broadband, video and/or wireless services and other discounted promotional offers, live-linear OTT service providers, and direct-to-consumer offerings by certain of our programmers. Our gross new DISH TV subscriber activations continue to be negatively impacted by an emphasis on acquiring higher quality subscribers.

DISH TV churn rate. Our DISH TV churn rate for the year ended December 31, 2022 was 1.54% compared to 1.40% for the same period in 2021. Our DISH TV churn rate for the year ended December 31, 2022 was negatively impacted by programming interruptions in connection with the scheduled expiration of certain programming carriage contracts, including Tegna. Our DISH TV churn rate continues to be adversely impacted by external factors, such as, among other things, cord cutting, shifting consumer behavior and increased competitive pressures, including aggressive marketing, bundled discount offers combining broadband, video and/or wireless services and other discounted promotional offers. In addition, our DISH TV churn rate was positively impacted by COVID-19 beginning in the second quarter of 2020, including, among other things, the recommendations and/or mandates from federal, state, and/or local authorities that customers refrain from non-essential movements outside of their homes and the resulting increased consumption of our Pay-TV services. Our DISH TV churn rate continues to be positively impacted by our emphasis on acquiring and retaining higher quality subscribers. Our DISH TV churn rate is also impacted by internal factors, such as, among other things, our ability to consistently provide outstanding customer service, price increases, our ability to control piracy and other forms of fraud, and the level of our retention efforts.

Our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV churn rate have been negatively impacted as a result of programming interruptions and threatened programming interruptions in connection with the scheduled expiration of programming carriage contracts with content providers. On October 6, 2021, Tegna removed its channels from our DISH TV programming lineup in 53 markets. On February 4, 2022, we and Tegna signed a new programming carriage contract which restored these channels to our DISH TV programming lineup. Although subscriber demand for local network stations has decreased in recent years as a result of, among other things, programming being available to subscribers through alternative methods, including over the air antennas, there can be no assurance that the removal of these or other channels will not have a material adverse effect on our business, results of operations and financial condition or otherwise disrupt our business. In addition, Disney removed its channels, including locals in eight markets, from our DISH TV and SLING TV programming lineup, from October 1, 2022 to October 3, 2022, after we were unable to reach a contract extension agreement prior to the expiration of the programming carriage contract. The channels were restored when we reached a tentative contract extension agreement with Disney and subsequently, we and Disney signed a new long-term programming carriage contract.

We cannot predict with any certainty the impact to our net Pay-TV subscriber additions, gross new DISH TV subscriber activations, and DISH TV subscriber churn rate resulting from programming interruptions or threatened programming interruptions that may occur in the future. As a result, we may at times suffer from periods of lower net Pay-TV subscriber additions or higher net Pay-TV subscriber losses.

Service revenue. "Service revenue" totaled $12.361 billion for the year ended December 31, 2022, a decrease of $427 million or 3.3% compared to the same period in 2021. The decrease in "Service revenue" compared to the same period in 2021 was primarily related to lower average Pay-TV subscriber base, partially offset by an increase in Pay-TV ARPU, discussed below.

Pay-TV ARPU. Pay-TV ARPU was $101.20 during the year ended December 31, 2022 versus $95.94 during the same period in 2021. The $5.26 or 5.5% increase in Pay-TV ARPU was primarily attributable to the DISH TV and SLING TV programming price increases and higher Pay-TV ad sales revenue. The DISH TV programming package price increases were effective in the first and fourth quarters of 2021 and the fourth quarter of 2022, and the SLING TV programming package price increases were effective during 2021 and the fourth quarter of 2022.

Cost of services. "Cost of services" totaled $7.423 billion during the year ended December 31, 2022, a decrease of $312 million or 4.0% compared to the same period in 2021. The decrease in "Cost of services" was primarily attributable to a lower average Pay-TV subscriber base, partially offset by higher programming costs per subscriber and higher variable and retention costs per subscriber. Programming costs per subscriber increased during the year ended December 31, 2022 due to rate increases in certain of our programming contracts, including the renewal of certain contracts at higher rates, particularly for local broadcast channels. Variable and retention costs per subscriber increased during the year ended December 31, 2022 due to, among other things, higher labor and in-home service costs, and higher credit losses. "Cost of services" represented 60.1% and 60.5% of "Service revenue" during the years ended December 31, 2022 and 2021, respectively.

Selling, general and administrative expenses. "Selling, general and administrative expenses" totaled $1.622 billion during the year ended December 31, 2022, a $148 million or 10.1% increase compared to the same period in 2021. This change was primarily driven by an increase in costs to support the Pay-TV segment and an increase in subscriber acquisition costs resulting from higher marketing expenditures.

Depreciation and amortization. "Depreciation and amortization" expense totaled $428 million during the year ended December 31, 2022, a $110 million or 20.5% decrease compared to the same period in 2021. This change was primarily driven by a decrease in depreciation expense from equipment leased to new and existing DISH TV subscribers and from the expiration of our QuetzSat-1 finance lease during the fourth quarter of 2021.

DISH TV SAC. DISH TV SAC was $1,044 during the year ended December 31, 2022 compared to $823 during the same period in 2021, an increase of $221 or 26.9%. This change was primarily attributable to an increase in advertising costs per subscriber, higher installation costs due to an increase in labor and other installation costs.

During the years ended December 31, 2022 and 2021, the amount of equipment capitalized under our lease program for new DISH TV subscribers totaled $55 million and $72 million, respectively. This decrease in capital expenditures primarily resulted from a decrease in gross new DISH TV subscriber activations and a higher percentage of remanufactured receivers being activated on new subscriber accounts.

Retail Wireless Segment

We offer nationwide prepaid and postpaid Retail Wireless services to subscribers primarily under our Boost Mobile, Boost postpaid and Gen Mobile brands, as well as a competitive portfolio of wireless devices. Prepaid wireless subscribers generally pay in advance for monthly access to wireless talk, text, and data services. Postpaid wireless subscribers are qualified to pay after receiving wireless talk, text, and data services, and may also qualify for financing arrangements for wireless devices.

Boost postpaid. In the fourth quarter of 2022, we launched our Boost postpaid wireless service, to a limited number of customers who had signed up for early registration. During 2023, we launched our nationwide expansion of our Boost postpaid wireless service, and at the end of the third quarter of 2023, we began offering the iPhone 15 on our 5G Network and expanded our Boost postpaid offering through a distribution partnership with Amazon.

We are currently operating our Retail Wireless segment primarily as an MVNO as we continue our 5G Network Deployment and commercialize and grow customer traffic on our 5G Network. We are transitioning our Retail Wireless segment to an MNO as our 5G Network becomes commercially available. We are currently activating Boost Mobile and Boost postpaid subscribers with compatible devices onto our 5G Network in markets where we have launched 5G voice services. Within our MVNO operations, today we depend on T-Mobile and AT&T to provide us with network services under MNSA and NSA, respectively. Under the NSA, we expect AT&T will become our primary network services provider.

Historically, a portion of our Wireless subscribers received services through T-Mobile's CDMA Network. However, T-Mobile previously provided notice that it intended to shutdown the CDMA Network on March 31, 2022. The shutdown began on March 31, 2022 and was completed during the second quarter of 2022. While we worked to mitigate the harms of this shutdown, we incurred significant costs to migrate subscribers on this timeline. We implemented targeted efforts and promotions directed at impacted customers, which resulted in the successful migration of the vast majority of our CDMA subscribers. The CDMA shutdown negatively impacted our gross new Wireless subscriber activations, our Wireless churn rate, and our results of operations during the first and second quarters of 2022. During the second quarter of 2022, we removed approximately 126,000 subscribers from our ending Wireless subscriber count representing Wireless subscribers who did not migrate off the CDMA network prior to the shutdown. The effect of the removal of the 126,000 subscribers was excluded from the calculation of our net Wireless subscriber additions/losses and Wireless churn rate.

On June 21, 2022, we and T-Mobile signed an amendment to the MNSA. In connection with this amendment, T-Mobile agreed to transfer to us (subject to required regulatory approvals) all Boost branded customers of former Sprint affiliates, Shentel and Swiftel, as well as Boost branded customers who were previously part of the California Public Utilities Commission CARE program (the "Boost Affiliate Subscribers"). We received regulatory approvals and on September 1, 2022 closed the transfer, upon which we received approximately 139,000 Boost Affiliate Subscribers. In addition, this amendment, among other things, settled all open disputes, including CDMA matters, with terms providing improved pricing and enhanced roaming solutions for our consumers. Prior to the signing of this agreement, the first and second quarters of 2022 were adversely impacted by, among other things, our CDMA migration costs and our ability to launch more competitive service plans in the marketplace. As a result, during the first and second quarters of 2022, we experienced lower gross new Wireless subscriber activations and higher Wireless churn.

During the second half of 2022, we began the process of migrating subscribers off the Transition Services Agreement ("TSA") with T-Mobile, including the billing systems, and onto our own billing and operational support systems. The migration of subscribers to our new billing and operational support systems accelerated during the fourth quarter of 2022 and continued in the first and second quarters of 2023. The migration of subscribers during the first and second quarters of 2023 negatively impacted our Wireless churn rate and our results of operations. During the second quarter of 2023, we completed the migration of subscribers off the TSA with T-Mobile and onto our own billing and operational support systems. As of December 31, 2023, we had 7.378 million Wireless subscribers. Currently, we offer Wireless subscribers competitive consumer plans with no annual service contracts and monthly service plans including high-speed data and unlimited talk and text, and financing arrangements for wireless devices for certain qualified subscribers.

ACP Subscribers. A portion of our subscriber base and revenue is comprised of subscribers who receive benefits under ACP. The ACP program is expected to end unless Congress appropriates additional funding. As a result, the FCC has begun taking steps to wind down the ACP and has announced that ACP stopped accepting new applications and enrollments on February 7, 2024. The FCC projects that households enrolled in the ACP will continue to receive the benefit on their service through April 2024. This date is an estimate and may change. Without additional funding from Congress, the FCC anticipates that the current ACP funding is projected to run out in April 2024. Discontinuation, amendment or repeal of ACP, or replacement of ACP with one having different eligibility requirements and/or funding levels could negatively impact, among other things, our net Wireless subscriber activations and results of operations or impose additional costs on our business. If ACP funding is ultimately restored or replaced, there can be no assurance that the timing of the restoration or replacement will not lead to service interruptions and negatively impact, among other things, our net Wireless subscriber activations and results of operations. Generally, ACP subscribers have lower Wireless ARPU than other Wireless subscribers.

Other Developments

We regularly evaluate ways to enhance our business. As part of this process, we are in regular dialogue with interested parties who may assist us in accomplishing our goals, including ongoing conversations with CONX Corp. (an entity partially owned by Charles W. Ergen, our Chairman) regarding a transaction involving our Retail Wireless segment. There can be no assurance that these discussions will lead to a transaction nor as to the structure or terms of any such transaction.

Competition

Retail wireless is a mature market with moderate year over year organic growth. Competitors include, among others, providers who offer similar communication services, such as talk, text and data. Competitive factors within the wireless communications services industry include, but are not limited to, pricing, market saturation, service and product offerings, customer experience and service quality. We compete with a number of national wireless carriers, including Verizon, AT&T and T-Mobile, all of which are significantly larger than us, serve a significant percentage of all wireless subscribers and enjoy scale advantages compared to us. Verizon, AT&T, and T-Mobile are currently the only nationwide MNOs in the United States.

Primary competitors to our Retail Wireless segment include, but are not limited to, Metro PCS (owned by T-Mobile), Cricket Wireless (owned by AT&T), Visible (owned by Verizon), Tracfone Wireless (owned by Verizon), and other MVNOs such as Consumer Cellular, Mint Mobile (T-Mobile has reached an agreement to acquire) and Xfinity Mobile.

RESULTS OF OPERATIONS – Retail Wireless Segment

Year Ended December 31, 2023 Compared to the Year Ended December 31, 2022.

Statements of Operations Data	For the Years Ended December 31, 2023	2022	Variance Amount	%
	(In thousands)			
Revenue:				
Service revenue	$ 3,337,240	$ 3,653,909	$ (316,669)	(8.7)
Equipment sales and other revenue	355,132	481,220	(126,088)	(26.2)
Total revenue	3,692,372	4,135,129	(442,757)	(10.7)
Costs and expenses:				
Cost of services	2,022,443	2,135,074	(112,631)	(5.3)
% of Service revenue	**60.6 %**	**58.4 %**		
Cost of sales - equipment and other	1,133,377	1,193,645	(60,268)	(5.0)
Selling, general and administrative expenses	859,111	705,760	153,351	21.7
% of Total revenue	**23.3 %**	**17.1 %**		
Depreciation and amortization	221,968	177,914	44,054	24.8
Impairment of long-lived assets and goodwill	98,657	—	98,657	*
Total costs and expenses	4,335,556	4,212,393	123,163	2.9
Operating income (loss)	$ (643,184)	$ (77,264)	$ (565,920)	*
Other data:				
Wireless subscribers, as of period end (in millions) **	7.378	7.983	(0.605)	(7.6)
Wireless subscriber additions, gross (in millions)	2.743	3.418	(0.675)	(19.7)
Wireless subscriber additions (losses), net (in millions) ***	(0.617)	(0.576)	(0.041)	(7.1)
Wireless ARPU	$ 36.15	$ 37.72	$ (1.57)	(4.2)
Wireless churn rate	4.17 %	4.46 %	(0.29)%	(6.5)
OIBDA	$ (421,216)	$ 100,650	$ (521,866)	*

* Percentage is not meaningful.

** During the second quarter of 2022, we removed approximately 126,000 subscribers from our ending Wireless subscriber count representing Wireless subscribers who did not migrate off the CDMA network prior to the shutdown. The effect of the removal of the 126,000 Wireless subscribers was excluded from the calculation of our net Wireless subscriber additions/losses and Wireless churn rate. See "Wireless – Retail Wireless" for further information on the CDMA shutdown. In addition, during the third quarter of 2022, approximately 139,000 Boost Affiliate Subscribers were transferred to us and are included in our ending Wireless subscriber count and excluded from our gross new Wireless subscriber activations. See "Wireless – Retail Wireless" for further information on the amended MNSA.

*** Includes ACP/Gen Mobile subscribers.

Wireless subscribers. We lost approximately 617,000 net Wireless subscribers during the year ended December 31, 2023 compared to the loss of approximately 576,000 net Wireless subscribers during the same period in 2022. This increase in net Wireless subscriber losses primarily resulted from lower gross new Wireless subscriber activations, partially offset by an increase in net ACP/Gen Mobile subscriber additions and a lower Wireless churn rate.

Wireless subscribers, gross. During the year ended December 31, 2023, we activated approximately 2.743 million gross new Wireless subscribers compared to approximately 3.418 million gross new Wireless subscribers during the same period in 2022, a decrease of 19.7%. This decrease in our gross new Wireless subscriber activations was primarily related to increased competitive pressures, including aggressive competitor marketing, discounted service plans and deeper wireless device subsidies. In addition, our gross new Wireless subscribers for the year ended December 31, 2023 was negatively impacted by our emphasis on acquiring and retaining higher quality subscribers.

Wireless churn rate. Our Wireless churn rate for the year ended December 31, 2023 was 4.17% compared to 4.46% for the same period in 2022. Our Wireless churn rate for the year ended December 31, 2023 was positively impacted by our emphasis on acquiring and retaining higher quality subscribers, partially offset by competitive pressures, including deeper wireless device subsidies. In addition, our Wireless churn rate for the year ended December 31, 2023 was negatively impacted by migrating subscribers off the TSA with T-Mobile and onto our new billing and operational support systems. Furthermore, our Wireless churn rate for the year ended December 31, 2022 was negatively impacted by the shutdown of the CDMA Network.

Service revenue. "Service revenue" totaled $3.337 billion for the year ended December 31, 2023, a decrease of $317 million or 8.7% compared to the same period in 2022. The decrease in "Service revenue" compared to the same period in 2022 was primarily related to a lower average Wireless subscriber base and a decrease in Wireless ARPU, discussed below.

Wireless ARPU. Wireless ARPU was $36.15 during the year ended December 31, 2023 versus $37.72 during the same period in 2022. The $1.57 or 4.2% decrease in Wireless ARPU was primarily attributable to, among other things, a shift in subscriber plan mix to lower priced service plans.

Equipment sales and other revenue. "Equipment sales and other revenue" totaled $355 million for the year ended December 31, 2023, a decrease of $126 million or 26.2% compared to the same period in 2022. The decrease in "Equipment sales and other revenue" compared to the same period in 2022 was primarily related to a decrease in units shipped and higher promotional subsidies, partially offset by higher revenue per unit shipped due to unit mix. During the year ended December 31, 2023, we shipped a higher percentage of devices that are compatible with our 5G Network and other devices that have a higher revenue per unit.

Cost of services. "Cost of services" totaled $2.022 billion for the year ended December 31, 2023, a decrease of $113 million or 5.3% compared to the same period in 2022. The decrease in "Cost of services" was primarily attributable to a lower average Wireless subscriber base, partially offset by higher monthly dealer incentive costs. During the year ended December 31, 2023, we realigned our commission structure with current business objectives to acquire higher quality, long-term subscribers, which resulted in elevated costs during the transition period.

Cost of sales – equipment and other. "Cost of sales – equipment and other" totaled $1.133 billion for the year ended December 31, 2023, a decrease of $60 million or 5.0% compared to the same period in 2022. The decrease in "Cost of sales – equipment and other" compared to the same period in 2022 was primarily related to a decrease in units shipped, partially offset by higher costs per unit shipped due to unit mix. During the year ended December 31, 2023, we shipped a higher percentage of devices that are compatible with our 5G Network and other devices that have a higher cost per unit.

Selling, general and administrative expenses. "Selling, general and administrative expenses" totaled $859 million during the year ended December 31, 2023, a $153 million or 21.7% increase compared to the same period in 2022. This change was primarily driven by higher marketing expenditures mainly related to the third quarter of 2023 nationwide expansion of our Boost postpaid wireless service and offering of the iPhone 15 on our 5G Network, partially offset by a decrease in costs to support the Retail Wireless segment. The year ended December 31, 2022 was negatively impacted by costs related to the development of our own billing and operational support systems as we prepared to migrate subscribers off the TSA with T-Mobile.

Impairment of long-lived assets and goodwill. "Impairment of long-lived assets and goodwill" totaled $99 million for the year ended December 31, 2023. This impairment represents a noncash impairment charge for goodwill. See Note 2 to the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021.

Statements of Operations Data	For the Years Ended December 31, 2022	2021	Variance Amount	%
	(In thousands)			
Revenue:				
Service revenue	$ 3,653,909	$ 4,142,883	$ (488,974)	(11.8)
Equipment sales and other revenue	481,220	754,322	(273,102)	(36.2)
Total revenue	4,135,129	4,897,205	(762,076)	(15.6)
Costs and expenses:				
Cost of services	2,135,074	2,450,516	(315,442)	(12.9)
% of Service revenue	**58.4 %**	**59.2 %**		
Cost of sales - equipment and other	1,193,645	1,347,396	(153,751)	(11.4)
Selling, general and administrative expenses	705,760	578,675	127,085	22.0
% of Total revenue	**17.1 %**	**11.8 %**		
Depreciation and amortization	177,914	176,833	1,081	0.6
Total costs and expenses	4,212,393	4,553,420	(341,027)	(7.5)
Operating income (loss)	$ (77,264)	$ 343,785	$ (421,049)	*
Other data:				
Wireless subscribers, as of period end (in millions) **	7.983	8.546	(0.563)	(6.6)
Wireless subscriber additions, gross (in millions)	3.418	3.690	(0.272)	(7.4)
Wireless subscriber additions (losses), net (in millions) ***	(0.576)	(0.728)	0.152	20.9
Wireless ARPU	$ 37.72	$ 39.00	$ (1.28)	(3.3)
Wireless churn rate	4.46 %	4.58 %	(0.12)%	(2.6)
OIBDA	$ 100,650	$ 520,618	$ (419,968)	(80.7)

* Percentage is not meaningful.

** During the second quarter of 2022, we removed approximately 126,000 subscribers from our ending Wireless subscriber count representing Wireless subscribers who did not migrate off the CDMA network prior to the shutdown. The effect of the removal of the 126,000 Wireless subscribers was excluded from the calculation of our net Wireless subscriber additions/losses and Wireless churn rate. See “Wireless – Retail Wireless” for further information on the CDMA shutdown. In addition, during the third quarter of 2022, approximately 139,000 Boost Affiliate Subscribers were transferred to us and are included in our ending Wireless subscriber count and excluded from our gross new Wireless subscriber activations. See “Wireless – Retail Wireless” for further information on the amended MNSA.

*** Includes ACP/Gen Mobile subscribers.

We entered the retail wireless business in 2020 as a result of the Boost Mobile Acquisition and the Ting Mobile Acquisition and we expanded the business in 2021 through the Republic Wireless Acquisition. During the second quarter of 2021, we acquired over 200,000 subscribers as a result of the Republic Wireless Acquisition. We are currently in the process of integrating our Retail Wireless operations and have made and continue to make targeted changes to our marketing, sales, and operations to further enhance our profitability.

Wireless subscribers. We lost approximately 576,000 net Wireless subscribers during the year ended December 31, 2022 compared to the loss of approximately 728,000 net Wireless subscribers during the same period in 2021. This decrease in net Wireless subscriber losses primarily resulted from a lower Wireless churn rate on a lower average Wireless subscriber base, partially offset by the shutdown of the CDMA Network, the effectiveness of our promotions and competitive pressures. During the years ended December 31, 2022 and 2021, our CDMA migration efforts required significant focus and resources from management and our sales personnel, which adversely impacted our gross new Wireless subscriber activations. Furthermore, we have and continue to face increased competitive pressures, including aggressive competitor marketing, discounted service plans and deeper wireless device subsidies.

Wireless churn rate. Our Wireless churn rate for the year ended December 31, 2022 was 4.46% compared to 4.58% for the same period in 2021. Our Wireless churn rate for the year ended December 31, 2022 was positively impacted by subscriber retention efforts. In addition, our Wireless churn rate was negatively impacted by the shutdown of the CDMA Network and competitive pressures, including deeper wireless device subsidies.

Service revenue. "Service revenue" totaled $3.654 billion for the year ended December 31, 2022, a decrease of $489 million or 11.8% compared to the same period in 2021. The decrease in "Service revenue" compared to the same period in 2021 was primarily related to a lower average Wireless subscriber base and a decrease in Wireless ARPU, discussed below.

Wireless ARPU. Wireless ARPU was $37.72 during the year ended December 31, 2022 versus $39.00 during the same period in 2021. The $1.28 or 3.3% decrease in Wireless ARPU was primarily attributable to, among other things, CDMA migration credits and subscriber plan mix to lower priced service plans.

Equipment sales and other revenue. "Equipment sales and other revenue" totaled $481 million for the year ended December 31, 2022, a decrease of $273 million or 36.2% compared to the same period in 2021. The decrease in "Equipment sales and other revenue" compared to the same period in 2021 was primarily related to a decrease in units shipped.

Cost of services. "Cost of services" totaled $2.135 billion for the year ended December 31, 2022, a decrease of $315 million or 12.9% compared to the same period in 2021. The decrease in "Cost of services" was primarily attributable to a lower average Wireless subscriber base and lower network services costs per subscriber, partially offset by higher customer data usage. In addition, the fourth quarter of 2022 was negatively impacted by the revaluation of certain non-cash contingent liabilities relating to a lower than anticipated wireless churn rate on Ting subscribers. Our lower network services costs per subscriber during the year ended December 31, 2022 resulted from the new MVNO rates, as a result of our amendment to the MNSA with T-Mobile and our NSA with AT&T. In addition, the fourth quarter of 2022 was negatively impacted by migrating subscribers off the TSA with T-Mobile and onto our new billing and operational support systems. We are incurring duplicative costs related to our TSA with T-Mobile and our own billing and operational support systems as we work to migrate subscribers off the TSA with T-Mobile.

Cost of sales – equipment and other. "Cost of sales – equipment and other" totaled $1.194 billion for the year ended December 31, 2022, a decrease of $154 million or 11.4% compared to the same period in 2021. The decrease in "Cost of sales – equipment and other" compared to the same period in 2021 was primarily related to a decrease in units shipped and a one-time reimbursement from T-Mobile as a result of our amendment to the MNSA with T-Mobile, partially offset by higher costs per unit shipped due to unit mix. During the fourth quarter of 2022, we shipped a higher percentage of devices that are compatible with our 5G Network. These devices have a higher cost per unit which contributed to the increase in costs per unit shipped.

Selling, general and administrative expenses. "Selling, general and administrative expenses" totaled $706 million during the year ended December 31, 2022, a $127 million or 22.0% increase compared to the same period in 2021. This change was primarily driven by higher marketing expenditures, an increase in costs to support the Retail Wireless segment, including costs of migrating subscribers off the TSA with T-Mobile and onto our new billing and operational support systems, and higher amortization of capitalized sales commissions.

5G Network Deployment Segment

We have invested a total of over $30 billion in Wireless spectrum licenses, which includes over $10 billion in initial noncontrolling investments in certain entities. The $30 billion of investments related to Wireless spectrum licenses does not include $9 billion of capitalized interest related to the carrying value of such licenses. See Note 2 and Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

We will need to raise additional capital in the future, which may not be available on favorable terms, to fund the efforts described below, as well as, among other things, make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. There can be no assurance that we will be able to profitably deploy these Wireless spectrum licenses, which may affect the carrying amount of these assets and our future financial condition or results of operations. See Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

DISH Network Spectrum

We have invested a total of over $30 billion to acquire certain Wireless spectrum licenses. These Wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. We plan to commercialize our Wireless spectrum licenses through our 5G Network Deployment. We have committed to deploy our 5G Network capable of serving increasingly larger portions of the U.S. population at different deadlines, including 20% of the U.S. population by June 2022 and 70% of the U.S. population by June 2023. If by June 2023, we are offering 5G broadband service to at least 50% of the U.S. population but less than 70% of the U.S. population, the 70% June 2023 deadline will be extended automatically to June 2025; however, as a result, we may, under certain circumstances, potentially be subject to certain penalties. On June 14, 2022, we announced we had successfully reached our 20% population coverage requirement. In addition, we announced and certified to the FCC that as of June 14, 2023, we offer 5G broadband service to over 73% of the U.S. population, or more than 246 million Americans nationwide. On September 29, 2023, the FCC confirmed we have met all of our June 14, 2023 band-specific 5G deployment commitments, and two of our three nationwide 5G commitments. The single remaining 5G commitment, that at least 70% of the U.S. population has access to average download speeds equal to 35 Mbps, will be confirmed using the drive test methodology agreed to and approved by the FCC. We have six months from September 29, 2023 to complete this drive test. We now have the largest commercial deployment of 5G VoNR in the world reaching approximately 200 million Americans and 5G broadband service reaching approximately 250 million Americans.

As a result of us providing 5G broadband service to over 50% of the U.S. population by June 14, 2023, the final build-out deadlines have been extended automatically to June 14, 2025 for us to offer 5G broadband service to at least 70% of the population in each Economic Area for the 700 MHz Licenses and AWS-4 Licenses and at least 75% of the population in each Economic Area for the H Block Licenses.

We may need to make significant additional investments or partner with others to, among other things, continue our 5G Network Deployment and further commercialize, build-out and integrate these licenses and related assets and any additional acquired licenses and related assets, as well as to comply with regulations applicable to such licenses. Depending on the nature and scope of such activities, any such investments or partnerships could vary significantly. In addition, as we continue our 5G Network Deployment, we have and may continue to incur significant additional expenses related to, among other things, research and development, wireless testing and ongoing upgrades to the wireless network infrastructure, software and third-party integration. As a result of these investments, among other factors, we plan to raise additional capital, which may not be available on favorable terms. We may also determine that additional wireless spectrum licenses may be required for our 5G Network Deployment and to compete effectively with other wireless service providers. See Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

DISH Network Noncontrolling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses

During 2015, through our wholly-owned subsidiaries American AWS-3 Wireless II L.L.C. ("American II") and American AWS-3 Wireless III L.L.C. ("American III"), we initially made over $10 billion in certain noncontrolling investments in Northstar Spectrum, LLC ("Northstar Spectrum"), the parent company of Northstar Wireless, L.L.C. ("Northstar Wireless," and collectively with Northstar Spectrum, the "Northstar Entities"), and in SNR Wireless HoldCo, LLC ("SNR HoldCo"), the parent company of SNR Wireless LicenseCo, LLC ("SNR Wireless," and collectively with SNR HoldCo, the "SNR Entities"), respectively. On October 27, 2015, the FCC granted certain AWS-3 wireless spectrum licenses (the "AWS-3 Licenses") to Northstar Wireless and to SNR Wireless, respectively, which are recorded in "Regulatory authorizations, net" on our Consolidated Balance Sheets. Under the applicable accounting guidance in Accounting Standards Codification 810, *Consolidation* ("ASC 810"), Northstar Spectrum and SNR HoldCo are considered variable interest entities ("VIEs") and, based on the characteristics of the structure of these entities and in accordance with the applicable accounting guidance, we consolidate these entities into our financial statements. On October 12, 2023, the FCC consented to the sale of Northstar Manager's ownership interests in Northstar Spectrum, which we purchased for a total of approximately $109 million. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to Northstar Spectrum as of the purchase date and we continue to consolidate the Northstar Entities as wholly-owned subsidiaries. Subsequent to December 31, 2023, the FCC consented to the sale of SNR Management's ownership interests in SNR HoldCo, which was purchased by our direct wholly-owned subsidiary EchoStar SNR HoldCo LLC for a total of approximately $442 million on February 16, 2024. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to SNR HoldCo as of the purchase date and we continue to consolidate the SNR Entities as wholly-owned subsidiaries. See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

RESULTS OF OPERATIONS – 5G Network Deployment Segment

Year Ended December 31, 2023 Compared to the Year Ended December 31, 2022.

Statements of Operations Data	For the Years Ended December 31, 2023	2022	Variance Amount	%
		(In thousands)		
Revenue:				
Equipment sales and other revenue	$ 91,928	$ 65,768	$ 26,160	39.8
Total revenue	91,928	65,768	26,160	39.8
Costs and expenses:				
Cost of sales - equipment and other	977,329	521,631	455,698	87.4
Selling, general and administrative expenses	255,380	223,539	31,841	14.2
Depreciation and amortization	620,685	131,566	489,119	*
Impairment of long-lived assets and goodwill	119,903	—	119,903	*
Total costs and expenses	1,973,297	876,736	1,096,561	*
Operating income (loss)	$ (1,881,369)	$ (810,968)	$ (1,070,401)	*
Other data:				
Purchases of property and equipment, net of refunds	$ 2,586,151	$ 2,596,209	$ (10,058)	(0.4)
OIBDA	$ (1,260,684)	$ (679,402)	$ (581,282)	(85.6)

* Percentage is not meaningful.

Cost of sales – equipment and other. "Cost of sales – equipment and other" totaled $977 million during the year ended December 31, 2023, an increase of $456 million compared to the same period in 2022. The increase primarily resulted from an increase in lease expense on communication towers, transport, cloud services, and other costs related to our 5G Network.

Selling, general and administrative expenses. "Selling, general and administrative expenses" totaled $255 million during the year ended December 31, 2023, a $32 million increase compared to the same period in 2022. This change was primarily driven by an increase in costs to support our 5G Network Deployment.

Depreciation and amortization. "Depreciation and amortization" expense totaled $621 million during the year ended December 31, 2023, a $489 million increase compared to the same period in 2022. This change was primarily driven by an increase in depreciation and amortization expense related to 5G Network Deployment assets being placed in service. We expect our depreciation and amortization expense to increase as we continue to place 5G Network Deployment assets into service.

Impairment of long-lived assets and goodwill. "Impairment of long-lived assets and goodwill" totaled $120 million for the year ended December 31, 2023. This impairment represents a noncash impairment charge for goodwill. See Note 2 to the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021.

Statements of Operations Data	For the Years Ended December 31, 2022	2021	Variance Amount	%
	(In thousands)			
Revenue:				
Equipment sales and other revenue	$ 65,768	$ 73,889	$ (8,121)	(11.0)
Total revenue	65,768	73,889	(8,121)	(11.0)
Costs and expenses:				
Cost of sales - equipment and other	521,631	100,040	421,591	*
Selling, general and administrative expenses	223,539	167,174	56,365	33.7
Depreciation and amortization	131,566	23,005	108,561	*
Total costs and expenses	876,736	290,219	586,517	*
Operating income (loss)	$ (810,968)	$ (216,330)	$ (594,638)	*
Other data:				
Purchases of property and equipment, net of refunds	$ 2,596,209	1,012,157	1,584,052	*
OIBDA	$ (679,402)	$ (193,325)	$ (486,077)	*

* Percentage is not meaningful.

Cost of sales – equipment and other. "Cost of sales – equipment and other" totaled $522 million for the year ended December 31, 2022, an increase of $422 million compared to the same period in 2021. The increase primarily resulted from an increase in lease expense on communication towers, transport, cloud services, and other costs related to our 5G network.

Selling, general and administrative expenses. "Selling, general and administrative expenses" totaled $224 million for the year ended December 31, 2022, a $56 million increase compared to the same period in 2021. This change was primarily driven by an increase in costs to support our 5G Network Deployment.

Depreciation and amortization. "Depreciation and amortization" expense totaled $132 million during the year ended December 31, 2022, a $109 million increase compared to the same period in 2021. This change was primarily driven by an increase in amortization expense related to certain software licenses and an increase in depreciation expense resulting from 5G Network Deployment assets being placed in service. We expect our depreciation expense to increase as we continue to place 5G Network Deployment assets into service.

Broadband and Satellite Services Segment

We are an industry leader in both networking technologies and services, innovating to deliver the global solutions that power a connected future for people, enterprises and things everywhere. We provide broadband services to consumer customers, which include home and small to medium-sized businesses, and satellite, multi-transport technologies and managed network services to enterprise customers, telecommunications providers, aeronautical service providers and government entities, including civilian and defense.

Our EchoStar XXIV satellite began service in December 2023, bringing additional broadband capacity across North and South America and is expected to be an integral part of our satellite service business. We will leverage EchoStar XXIV to deliver satellite services to unserved and underserved consumer markets in the Americas as well as enterprise and government markets.

We also design, provide and install gateway and terminal equipment to customers for other satellite systems. In addition, we design, develop, construct and provide telecommunication networks comprising satellite ground segment systems and terminals to mobile system operators and our enterprise customers. We also offer a robust suite of integrated, multi-transport solutions to enable airline and airline service providers to deliver reliable in-flight network connectivity serving both commercial and business aviation.

Backlog

As of December 31, 2023, our Broadband and Satellite services segment had approximately $1.980 billion of contracted revenue backlog, an increase of 30 percent compared to December 31, 2022 primarily due to an increase in contracts with domestic enterprise customers. We define the Broadband and Satellite services segment contracted revenue backlog as our expected future revenue under enterprise customer contracts that are non-cancelable, including lease revenue.

Competition

Our industry is highly competitive. As a global provider of network technologies, products and services, our Broadband and Satellite Services Segment competes with a large number of telecommunications service providers, which puts pressure on prices and margins. To compete effectively, we emphasize our network quality, customization capability, offering of networks as a turnkey managed service, position as a single point of contact for products and services and competitive prices.

In our consumer broadband satellite technologies and internet services markets, we compete against traditional telecommunications and wireless carriers, other satellite internet providers, as well as fiber optic, cable, and wireless internet service providers. Customers consider cost, speed and accessibility to be key determining factors in the selection of a service provider. In addition, government subsidies, such as the Federal Communication Commission's ("FCC") Rural Development Opportunity Fund, can have the effect of subsidizing the growth of our wired, wireless and satellite competitors. Our primary satellite competitors in the North American consumer market are ViaSat Communications, Inc., which is owned by ViaSat, Inc. ("ViaSat"), and Space Exploration Technologies Corp. ("SpaceX"). Both ViaSat and SpaceX have also entered the South and Central American consumer markets. We seek to differentiate ourselves based on the ubiquitous availability of our service, quality, proprietary technology, and distribution channels.

In our enterprise markets, we compete against multiple categories of providers. In the managed services area, we compete against providers of satellite-based and terrestrial-based networks, including fiber optic, cable, wireless internet service, multiprotocol label switching (MPLS) and internet protocol-based virtual private networks (VPN), which vary by region. In the in-flight connectivity market, we compete against direct and indirect providers of passenger WiFi services, such as ViaSat and SpaceX. To compete effectively, we emphasize our network quality, customization capability, ability to offer networks as a turnkey managed service, position as a single point of contact for products and services and competitive prices. Our principal competitors for the supply of satellite technology platforms are Gilat Satellite Networks Ltd, ViaSat, and ST Engineering iDirect, Inc. To differentiate ourselves from our competitors, we emphasize particular technological features of our products and services, our ability to customize networks and perform desired development work and the quality of our customer service. We also face competition from resellers and numerous local companies who purchase equipment and sell services to local customers, including domestic and international telecommunications operators, cable companies and other major carriers.

In the emerging NTN market, we expect to compete with several companies targeting this area, with technology approaches that may be similar to us or in some cases different. We will compete on the basis of our strong spectrum position, expertise in satellite and 5G technologies and our global industry relationships.

RESULTS OF OPERATIONS – Broadband and Satellite Services Segment

Year Ended December 31, 2023 Compared to the Year Ended December 31, 2022.

Statements of Operations Data	For the Years Ended December 31, 2023	2022	Variance Amount	%
	(In thousands)			
Revenue:				
Service revenue	$ 1,443,616	$ 1,611,069	$ (167,453)	(10.4)
Equipment sales and other revenue	311,943	387,024	(75,081)	(19.4)
Total revenue	1,755,559	1,998,093	(242,534)	(12.1)
Costs and expenses:				
Cost of services	530,875	567,311	(36,436)	(6.4)
% of Service revenue	**36.8 %**	**35.2 %**		
Cost of sales - equipment and other	241,570	294,683	(53,113)	(18.0)
Selling, general and administrative expenses	486,379	491,025	(4,646)	(0.9)
% of Total revenue	**27.7 %**	**24.6 %**		
Depreciation and amortization	419,262	462,748	(43,486)	(9.4)
Impairment of long-lived assets and goodwill	536,082	711	535,371	*
Total costs and expenses	2,214,168	1,816,478	397,690	21.9
Operating income (loss)	$ (458,609)	$ 181,615	$ (640,224)	*
Other data:				
Broadband subscribers, as of period end (in millions)	1.004	1.228	(0.224)	(18.2)
Broadband subscriber additions (losses), net (in millions)	(0.224)	(0.234)	0.010	4.3
OIBDA	$ (39,347)	$ 644,363	$ (683,710)	*

* Percentage is not meaningful.

Broadband subscribers. We lost approximately 224,000 net Broadband subscribers for the year ended December 31, 2023 compared to the loss of approximately 234,000 net Broadband subscribers during the same period in 2022. The net Broadband subscriber losses for the year ended December 31, 2023 primarily resulted from our past capacity limitations, competitive pressure from satellite-based competitors and other technologies, and our emphasis on acquiring and retaining higher quality subscribers.

Service revenue. "Service revenue" totaled $1.444 billion for the year ended December 31, 2023, a decrease of $167 million, or 10.4%, as compared to 2022. The decrease was primarily attributable to lower sales of broadband services and lower sales to our North American Enterprise customers, partially offset by a net increase in broadband services sales to our international enterprise customers.

Equipment sales and other revenue. "Equipment sales and other revenue" totaled $312 million for the year ended December 31, 2023, a decrease of $75 million, or 19.4%, as compared to 2022. The change was primarily attributable to a decrease related to our North American enterprise customers due to lower hardware sales and positive adjustments on certain long-term contracts, and a decrease in hardware sales to our international enterprise customers, partially offset by an increase in sales to our mobile satellite system customers.

Cost of services. "Cost of services" totaled $531 million for the year ended December 31, 2023, a decrease of $36 million, or 6.4%, as compared to 2022. The decrease was primarily attributable to the corresponding decrease in services and revenue.

Cost of sales – equipment and other. "Cost of sales – equipment and other" totaled $242 million for the year ended December 31, 2023, a decrease of $53 million, or 18.0%, as compared to 2022. The decrease was primarily attributable to the corresponding decrease in equipment revenue.

Selling, general and administrative expenses. "Selling, general and administrative expenses" totaled $486 million for the year ended December 31, 2023, a decrease of $5 million, or 0.9%, as compared to 2022. The decrease was primarily attributable to decreases in sales and marketing expenses, partially offset by Merger related costs.

Depreciation and amortization. "Depreciation and amortization" expense totaled $419 million for the year ended December 31, 2023, a decrease of $43 million, or 9.4%, as compared to 2022. The decrease was primarily attributable to decreases in other non-satellite depreciation expense, partially offset by increase in satellite depreciation driven by our Al Yah 3 and EchoStar XXIV satellites.

Impairment of long-lived assets and goodwill. "Impairment of long-lived assets and goodwill" totaled $536 million for the year ended December 31, 2023. This impairment represents a $533 million noncash impairment charge to goodwill and a $3 million noncash impairment for long-lived assets. See Note 2 to the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021.

Statements of Operations Data	For the Years Ended December 31, 2022	2021	Variance Amount	%
	(In thousands)			
Revenue:				
Service revenue	$ 1,611,069	$ 1,702,288	$ (91,219)	(5.4)
Equipment sales and other revenue	387,024	283,432	103,592	36.5
Total revenue	1,998,093	1,985,720	12,373	0.6
Costs and expenses:				
Cost of services	567,311	548,994	18,317	3.3
% of Service revenue	**35.2 %**	**32.3 %**		
Cost of sales - equipment and other	294,683	234,740	59,943	25.5
Selling, general and administrative expenses	491,025	496,338	(5,313)	(1.1)
% of Total revenue	**24.6 %**	**25.0 %**		
Depreciation and amortization	462,748	496,361	(33,613)	(6.8)
Impairment of long-lived assets	711	245	466	*
Total costs and expenses	1,816,478	1,776,678	39,800	2.2
Operating income (loss)	$ 181,615	$ 209,042	$ (27,427)	(13.1)
Other data:				
Broadband subscribers, as of period end (in millions)	1.228	1.462	(0.234)	(16.0)
Broadband subscriber additions (losses), net (in millions)	(0.234)	(0.102)	(0.132)	*
OIBDA	$ 644,363	$ 705,403	(61,040)	(8.7)

* Percentage is not meaningful.

Broadband subscribers. We lost approximately 234,000 net Broadband subscribers for the year ended December 31, 2022 compared to the loss of approximately 102,000 net Broadband subscribers during the same period in 2021. This increase in net Broadband subscriber losses primarily resulted from our capacity limitations, increasing bandwidth usage by our existing subscribers, and competitive pressures are impacting our consumer subscriber levels.

Services revenue. "Services revenue" totaled $1.611 billion for the year ended December 31, 2022, a decrease of $91 million, or 5.4%, as compared to 2021. The decrease was primarily attributable to lower sales of broadband services to our consumer customers, partially offset by higher sales of broadband services to our enterprise customers and to our mobile satellite system and other customers. These variances reflect an estimated negative impact of exchange rate fluctuations primarily attributable to our enterprise customers.

Equipment sales and other revenue. "Equipment sales and other revenue" totaled $387 million for the year ended December 31, 2022, an increase of $104 million, or 36.5%, as compared to 2021. The increase was primarily attributable to increases in hardware sales to our enterprise customers mainly associated with a certain customer in North America and to international customers, and increases on our hardware sales to our mobile satellite system customers, partially offset by decreases in hardware sales to our consumer customers.

Cost of services. "Cost of services" totaled $567 million for the year ended December 31, 2022, an increase of $18 million, or 3.3%, as compared to 2021. The increase was attributable to a non-recurring decrease in a certain international regulatory fee in 2021 and increases in cost of services provided to our consumer and enterprise customers, mainly related to service delivery expenses, such as field services and customer care.

Cost of sales – equipment and other. "Cost of sales – equipment and other" totaled $295 million for the year ended December 31, 2022, an increase of $60 million, or 25.5%, as compared to 2021. The increase was primarily attributable to the corresponding increase in equipment revenue and change in product mix.

Selling, general and administrative expenses. "Selling, general and administrative expenses" totaled $491 million for the year ended December 31, 2022, a decrease of $5 million, or 1.1%, as compared to 2021. The decrease was primarily attributable to decreases in sales and marketing expenses.

Depreciation and amortization. "Depreciation and amortization" expenses totaled $463 million for the year ended December 31, 2022, a decrease of $34 million, or 6.8%, as compared to 2021. The decrease was primarily attributable to decreases in other property and equipment depreciation expense, decreases in our satellite depreciation, mainly related to our SPACEWAY 3 satellite which was fully depreciated at the end of the first quarter of 2021, and decreases in amortization of intangibles. These decreases were partially offset by increases in amortization of our capitalized software.

OTHER CONSOLIDATED RESULTS

Year Ended December 31, 2023 Compared to the Year Ended December 31, 2022.

Statements of Operations Data	For the Years Ended December 31, 2023	2022	Variance Amount	%
		(In thousands)		
Operating income (loss)	$ (277,909)	$ 2,232,838	$ (2,510,747)	*
Other income (expense):				
Interest income	207,374	93,240	114,134	*
Interest expense, net of amounts capitalized	(90,357)	(79,217)	(11,140)	(14.1)
Other, net	(1,770,792)	1,088,441	(2,859,233)	*
Total other income (expense)	(1,653,775)	1,102,464	(2,756,239)	*
Income (loss) before income taxes	(1,931,684)	3,335,302	(5,266,986)	*
Income tax (provision) benefit, net	296,860	(798,410)	1,095,270	*
Effective tax rate	**15.4 %**	**23.9 %**		
Net income (loss)	(1,634,824)	2,536,892	(4,171,716)	*
Less: Net income (loss) attributable to noncontrolling interests, net of tax	67,233	59,172	8,061	13.6
Net income (loss) attributable to EchoStar	$ (1,702,057)	$ 2,477,720	$ (4,179,777)	*

* Percentage is not meaningful.

Interest income. "Interest income" totaled $207 million during the year ended December 31, 2023, an increase of $114 million compared to the same period in 2022. This increase primarily resulted from higher percentage returns earned on our cash and marketable investment securities, partially offset by lower average cash and marketable investment securities balances during the year ended December 31, 2023.

Other, net. "Other, net" expense totaled $1.771 billion during the year ended December 31, 2023, compared to income of $1.088 billion during the same period in 2022. This change primarily resulted from a loss of approximately $1.793 billion (including the $100 million prepayment previously made to T-Mobile) as the probability weighted fair value of our option to purchase certain of T-Mobile's 800 MHz spectrum licenses was reduced to zero compared to a $1.015 billion increase during the year ended December 31, 2022. In addition, the year ended December 31, 2023 was negatively impacted by a $103 million net decrease in gains on marketable and non-marketable investment securities and impairments of "Other investment securities, net." Furthermore, the year ended December 31, 2023 was positively impacted by $73 million in gains from the repurchases of our 3 3/8% Convertible Notes due 2026 (the "Convertible Notes due 2026"), our 2 3/8% Convertible Notes due 2024 (the "Convertible Notes due 2024") and 0% Convertible Notes due 2025 (the "Convertible Notes due 2025," and collectively with the Convertible Notes due 2026 and the Convertible Notes due 2024, the "Convertible Notes") and our 5 7/8% Senior Notes due 2024. See Note 6 and 10 in the Notes to our Consolidated Financial Statements for further information.

Income tax (provision) benefit, net. Our income tax benefit was $297 million during the year ended December 31, 2023 compared to a provision of $798 million during the same period in 2022. The change was primarily related to a decrease in "Income (loss) before income taxes" and the change in our effective tax rate. Our effective tax rate during the year ended December 31, 2023 was impacted by noncash impairment charges to goodwill, and federal, state and foreign valuation allowances.

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021.

Statements of Operations Data	For the Years Ended December 31, 2022	2021	Variance Amount	%
	(In thousands)			
Operating income (loss)	$ 2,232,838	$ 3,422,404	$ (1,189,566)	(34.8)
Other income (expense):				
Interest income	93,240	33,903	59,337	*
Interest expense, net of amounts capitalized	(79,217)	(111,151)	31,934	28.7
Other, net	1,088,441	4,716	1,083,725	*
Total other income (expense)	1,102,464	(72,532)	1,174,996	*
Income (loss) before income taxes	3,335,302	3,349,872	(14,570)	(0.4)
Income tax (provision) benefit, net	(798,410)	(828,437)	30,027	3.6
Effective tax rate	**23.9 %**	**24.7 %**		
Net income (loss)	2,536,892	2,521,435	15,457	0.6
Less: Net income (loss) attributable to noncontrolling interests, net of tax	59,172	35,150	24,022	68.3
Net income (loss) attributable to EchoStar	$ 2,477,720	$ 2,486,285	$ (8,565)	(0.3)

* Percentage is not meaningful.

Other, net. "Other, net" income totaled $1.088 billion during the year ended December 31, 2022, an increase of $1.084 billion compared to the same period in 2021. This change primarily resulted from a $1.015 billion increase in the fair value of our option to purchase certain of T-Mobile's 800 MHz spectrum licenses during the year ended December 31, 2022 compared to a $13 million decrease during the year ended December 31, 2021. See Note 6 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Income tax (provision) benefit, net. Our income tax provision was $798 million during the year ended December 31, 2022, a decrease of $30 million compared to the same period in 2021. The decrease in the provision was primarily related to a decrease in "Income (loss) before income taxes."

Non-GAAP Performance Measures and Reconciliation

It is management's intent to provide non-GAAP financial information to enhance the understanding of our GAAP financial information, and it should be considered by the reader in addition to, but not instead of, the financial statements prepared in accordance with GAAP. Each non-GAAP financial measure is presented along with the corresponding GAAP measure so as not to imply that more emphasis should be placed on the non-GAAP measure. We believe that providing these non-GAAP measures in addition to the GAAP measures allows management, investors and other users of our financial information to more fully and accurately assess both consolidated and segment performance. The non-GAAP financial information presented may be determined or calculated differently by other companies and may not be directly comparable to that of other companies.

Consolidated EBITDA

Consolidated EBITDA is not a measure determined in accordance with GAAP and should not be considered a substitute for operating income, net income or any other measure determined in accordance with GAAP. Consolidated EBITDA is used as a measurement of operating efficiency and overall financial performance and we believe it is a helpful measure for those evaluating operating performance in relation to our competitors. Conceptually, EBITDA measures the amount of income generated each period that could be used to service debt, pay taxes and fund capital expenditures. EBITDA should not be considered in isolation or as a substitute for measures of performance prepared in accordance with GAAP.

	For the Years Ended December 31,		
	2023	**2022**	**2021**
		(In thousands)	
Net income (loss) attributable to EchoStar	$ (1,702,057)	$ 2,477,720	$ 2,486,285
Interest, net	(117,017)	(14,023)	77,248
Income tax provision (benefit), net	(296,860)	798,410	828,437
Depreciation and amortization	1,597,923	1,174,895	1,213,946
Consolidated EBITDA	$ (518,011)	$ 4,437,002	$ 4,605,916

The changes in Consolidated EBITDA during the years ended December 31, 2023, 2022, and 2021, were primarily a result of the factors described in connection with operating revenues and operating expenses, including the impact from changes in the probability weighted fair value of our option to purchase certain of T-Mobile's 800 MHz spectrum licenses resulting in a loss of approximately $1.793 billion (including the $100 million prepayment previously made to T-Mobile) and the "Impairment of long-lived assets and goodwill" of $761 million.

Segment OIBDA

Segment OIBDA, which is presented below, is a non-GAAP measure and does not purport to be an alternative to operating income (loss) as a measure of operating performance. We believe this measure is useful to management, investors and other users of our financial information in evaluating operating profitability of our business segments on a more variable cost basis as it excludes the depreciation and amortization expenses related primarily to capital expenditures and acquisitions for those business segments, as well as in evaluating operating performance in relation to our competitors. Segment OIBDA is calculated by adding back depreciation and amortization expense to business segments operating income (loss). See Note 16 to the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

For the Year Ended December 31, 2023	Pay-TV	Retail Wireless	5G Network Deployment	Broadband and Satellite Services	Eliminations	Consolidated
			(In thousands)			
Segment operating income (loss)	$ 2,699,810	$ (643,184)	$ (1,881,369)	$ (458,609)	$ 5,443	$ (277,909)
Depreciation and amortization	381,292	221,968	620,685	419,262	(45,284)	1,597,923
OIBDA	$ 3,081,102	$ (421,216)	$ (1,260,684)	$ (39,347)	$ (39,841)	$ 1,320,014

For the Year Ended December 31, 2022	Pay-TV	Retail Wireless	5G Network Deployment	Broadband and Satellite Services	Eliminations	Consolidated
			(In thousands)			
Segment operating income (loss)	$ 2,933,898	$ (77,264)	$ (810,968)	$ 181,615	$ 5,557	$ 2,232,838
Depreciation and amortization	428,471	177,914	131,566	462,748	(25,804)	1,174,895
OIBDA	$ 3,362,369	$ 100,650	$ (679,402)	$ 644,363	$ (20,247)	$ 3,407,733

For the Year Ended December 31, 2021	Pay-TV	Retail Wireless	5G Network Deployment	Broadband and Satellite Services	Eliminations	Consolidated
Segment operating income (loss)	$ 3,075,579	$ 343,785	$ (216,330)	$ 209,042	$ 10,328	$ 3,422,404
Depreciation and amortization	538,836	176,833	23,005	496,361	(21,089)	1,213,946
OIBDA	$ 3,614,415	$ 520,618	$ (193,325)	$ 705,403	$ (10,761)	$ 4,636,350

The changes in OIBDA during the years ended December 31, 2023, 2022, and 2021, were primarily a result of the factors described in connection with operating revenues and operating expenses, and the "Impairment of long-lived assets and goodwill" of: (1) $536 million from our Broadband and Satellite Service segment; (2) $120 million from our 5G Network Deployment segment; (3) $99 million from our Retail Wireless segment; and (4) $6 million from our Pay-TV segment.

LIQUIDITY AND CAPITAL RESOURCES

Cash, Cash Equivalents and Current Marketable Investment Securities

We consider all liquid investments purchased with a remaining maturity of 90 days or less at the date of acquisition to be cash equivalents. See Note 6 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information regarding our marketable investment securities. As of December 31, 2023, our cash, cash equivalents and current marketable investment securities totaled $2.444 billion compared to $4.307 billion as of December 31, 2022, a decrease of $1.863 billion. This decrease in cash, cash equivalents and current marketable investment securities primarily resulted from capital expenditures, net of refunds, of $4.225 billion (including capitalized interest related to Regulatory authorizations), the repurchases and redemption of our senior notes of $1.461 billion, net repurchases of our Convertible Notes of $110 million, repayments of long-term debt and finance lease obligations of $122 million, the purchase of Northstar Manager's ownership interests in Northstar Spectrum of $109 million, partially offset by cash generated from operating activities of $2.433 billion and $1.522 billion in net proceeds from the issuance of our 11 3/4% Senior Notes due 2027.

Debt Issuances and Maturity

On May 24, 2021, we issued $1.5 billion aggregate principal amount of our 5 1/8% Senior Notes due June 1, 2029. Interest accrues at an annual rate of 5 1/8% and is payable semi-annually in cash, in arrears on June 1 and December 1 of each year.

On November 26, 2021, we issued $2.750 billion aggregate principal amount of our 5 1/4% Senior Secured Notes due December 1, 2026. Interest accrues at an annual rate of 5 1/4% and is payable semi-annually in cash, in arrears on June 1 and December 1 of each year, commencing on June 1, 2022.

On November 26, 2021, we issued $2.5 billion aggregate principal amount of our 5 3/4% Senior Secured Notes due December 1, 2028. Interest accrues at an annual rate of 5 3/4% and is payable semi-annually in cash, in arrears on June 1 and December 1 of each year, commencing on June 1, 2022.

On November 15, 2022 and January 26, 2023, we issued $2.0 billion and $1.5 billion, respectively, aggregate principal amount of our 11 3/4% Senior Secured Notes due November 15, 2027. Interest accrues at an annual rate of 11 3/4% and is payable semi-annually in cash, in arrears on May 15 and November 15 of each year, commencing on May 15, 2023.

Our 6 3/4% Senior Notes due 2021 with an aggregate principal balance of $2.0 billion were repurchased or redeemed as of June 1, 2021.

Our 5 7/8% Senior Notes due 2022 with an aggregate principal balance of $2.0 billion were repurchased or redeemed as of July 15, 2022.

Our 5% Senior Notes due 2023 with an aggregate principal balance of $1.5 billion were repurchased or redeemed as of March 15, 2023.

During the year ended December 31, 2023, we repurchased approximately $49 million of our 2 3/8% Convertible Notes due 2024 in open market trades. The remaining balance of approximately $951 million matures on March 15, 2024.

During the year ended December 31, 2023, we repurchased approximately $17 million of our 5 7/8% Senior Notes due 2024 in open market trades. The remaining balance of approximately $1.983 billion matures on November 15, 2024.

Cash Flow

The following discussion highlights our cash flow activities during the years ended December 31, 2023, 2022 and 2021.

Cash flows from operating activities. We typically reinvest the cash flow from operating activities in our business primarily to grow our subscriber base, expand our infrastructure, make strategic investments, such as significant investments in our Wireless business, including our 5G Network Deployment, and repay debt obligations. For the years ended December 31, 2023, 2022 and 2021, we reported "Net cash flows from operating activities" of $2.433 billion, $3.621 billion and $4.655 billion, respectively.

Net cash flows from operating activities from 2022 to 2023 decreased $1.189 billion, primarily attributable to a $1.352 billion decrease in income adjusted to exclude non-cash charges for "Depreciation and amortization" expense, "Realized and unrealized losses (gains) on investments, impairments and other," "Realized and unrealized losses (gains) on derivatives," "Non-cash, stock-based compensation" expense, "Deferred tax expense (benefit) and "Impairment of long-lived assets and goodwill." In addition, this change also includes decreases in cash flows resulting from changes in operating assets and liabilities principally attributable to timing differences between book expense and cash payments, including taxes.

Net cash flows from operating activities from 2021 to 2022 decreased $1.034 billion, primarily attributable to a $1.003 billion decrease in income adjusted to exclude non-cash charges for "Depreciation and amortization" expense, "Realized and unrealized losses (gains) on investments, impairments and other," "Realized and unrealized losses (gains) on derivatives," "Non-cash, stock-based compensation" expense, "Impairment of long-lived assets and goodwill," and "Deferred tax expense (benefit)." In addition, this change also includes decreases in cash flows resulting from changes in operating assets and liabilities principally attributable to timing differences between book expense and cash payments, including taxes.

Cash flows from investing activities. Our investing activities generally include purchases and sales of marketable investment securities, acquisitions, strategic investments, including purchases and settlements of derivative financial instruments, and purchases of wireless spectrum licenses, capital expenditures and capitalized interest. For the years ended December 31, 2023, 2022 and 2021, we reported outflows from "Net cash flows from investing activities" of $2.809 billion, $9.060 billion and $4.247 billion, respectively.

The year ended December 31, 2023 was impacted by cash outflows primarily related to capital expenditures, net of refunds, of $4.225 billion (including capitalized interest related to Regulatory authorizations), partially offset by $1.303 billion in net sales of marketable investment securities and $148 million in proceeds from other debt investments.

The year ended December 31, 2022 was impacted by cash outflows primarily related to a $7.207 billion payment to the FCC for the 3.45–3.55 GHz band licenses and capital expenditures, net of refunds, of $4.035 billion (including capitalized interest related to Regulatory authorizations), partially offset by $2.194 billion in net sales of marketable investment securities.

The year ended December 31, 2021 was impacted by cash outflows primarily related to capital expenditures, net of refunds, of $2.397 billion (including capitalized interest primarily related to Regulatory authorizations) and $1.948 billion in net purchases of marketable investment securities, partially offset by a $337 million deposit refund from our participation in the auction for the Flexible-Use Service Licenses in the 3.7-3.98 GHz Band.

During the years ended December 31, 2023, 2022 and 2021, capital expenditures for wireless equipment totaled $2.586 billion, $2.596 billion and $1.012 billion, respectively. The increase in 2022 for wireless equipment primarily resulted from our 5G Network Deployment. In addition, capital expenditures during the years ended December 31, 2023, 2022 and 2021 for new and existing DISH TV customer equipment totaled $75 million, $78 million and $104 million, respectively. The decrease in 2023 for new and existing DISH TV customer equipment primarily resulted from lower gross new DISH TV subscriber activations. The decrease in 2022 for new and existing DISH TV customer equipment primarily resulted from lower gross new DISH TV subscriber activations and a higher percentage of remanufactured receivers being activated on new subscriber accounts.

During the year ended December 31, 2023 capital expenditures for satellites related to our Pay-TV segment totaled $105 million. During the years ended December 31, 2023, 2022 and 2021, other corporate capital expenditures totaled $63 million, $50 million and $65 million, respectively. During the years ended December 31, 2023, 2022 and 2021 capital expenditures for our Broadband and Satellite services segment, net of refunds, totaled $233 million, $326 million and $438 million, respectively.

Cash flows from financing activities. Our financing activities generally include net proceeds related to the issuance of equity and long-term and convertible debt, cash used for the repurchase, redemption or payment of long-term debt and finance lease obligations, and repurchases of our Class A common stock. For the years ended December 31, 2023, 2022 and 2021, we reported "Net cash flows from financing activities" outflows of $277 million, $274 million and inflows of $3.515 billion, respectively.

The net cash outflows in 2023 primarily related to the repurchases and redemption of our senior notes of $1.461 billion, net repurchases of our Convertible Notes of $110 million and repayments of long-term debt and finance lease obligations of $122 million, partially offset by $1.522 billion in net proceeds from the issuance of our 11 3/4% Senior Notes due 2027.

The net cash outflows in 2022 primarily related to the repurchases and redemption of our 5 7/8% Senior Notes due 2022 with an aggregate principal balance of $2.0 billion, $89 million of repurchases of our treasury shares and $57 million of repurchases of our 5% Senior Notes due 2023 in open market trades, partially offset by $1.949 billion in net proceeds from the issuance of our 11 3/4% Senior Notes due 2027.

The net cash inflows in 2021 primarily related to $2.737 billion in net proceeds from the issuance of our 5 1/4% Senior Secured Notes due 2026, $2.488 billion in net proceeds from the issuance of our 5 3/4% Senior Secured Notes due 2028, $1.490 billion in net proceeds from the issuance of our 5 1/8% Senior Notes due 2029, partially offset by the repurchases and redemption of our 6 3/4% Senior Notes due 2021 with an aggregate principal balance of $2.0 billion, the redemption of our 7 5/8% Senior Unsecured Notes due 2021 with an aggregate principal balance of $900 million and $261 million of repurchases of our treasury shares.

Free Cash Flow

We define free cash flow as "Net cash flows from operating activities" less: (i) "Purchases of property and equipment" net of "Refunds and other receipts of purchases of property and equipment," and (ii) "Capitalized interest related to Regulatory authorizations," as shown on our Consolidated Statements of Cash Flows. We believe free cash flow is an important liquidity metric because it measures, during a given period, the amount of cash generated that is available to repay debt obligations, make investments (including strategic wireless investments), fund acquisitions and for certain other activities. Free cash flow is not a measure determined in accordance with GAAP and should not be considered a substitute for "Operating income," "Net income," "Net cash flows from operating activities" or any other measure determined in accordance with GAAP. Since free cash flow includes investments in operating assets, we believe this non-GAAP liquidity measure is useful in addition to the most directly comparable GAAP measure "Net cash flows from operating activities."

Free cash flow can be significantly impacted from period to period by changes in "Net income (loss)" adjusted to exclude certain non-cash charges, operating assets and liabilities, "Purchases of property and equipment," net of "Refunds and other receipts of purchases of property and equipment," and "Capitalized interest related to Regulatory authorizations." These items are shown in the "Net cash flows from operating activities" and "Net cash flows from investing activities" sections on our Consolidated Statements of Cash Flows included herein. Operating asset and liability balances can fluctuate significantly from period to period and there can be no assurance that free cash flow will not be negatively impacted by material changes in operating assets and liabilities in future periods, since these changes depend upon, among other things, management's timing of payments and control of inventory levels, and cash receipts. In addition to fluctuations resulting from changes in operating assets and liabilities, free cash flow can vary significantly from period to period depending upon, among other things, subscriber additions (losses), service revenue, subscriber churn, subscriber acquisition and retention costs including amounts capitalized under our equipment lease programs for DISH TV subscribers, operating efficiencies, increases or decreases in purchases of property and equipment, expenditures related to our 5G Network Deployment and other factors.

The following table reconciles free cash flow to "Net cash flows from operating activities."

	For the Years Ended December 31,		
	2023	2022	2021
		(In thousands)	
Net cash flows from operating activities	$ 2,432,647	$ 3,621,190	$ 4,655,373
Purchases of property and equipment, net of refunds (including capitalized interest related to Regulatory authorizations)	(4,224,783)	(4,034,781)	(2,397,197)
Free cash flow	$ (1,792,136)	$ (413,591)	$ 2,258,176

Operational Liquidity

We make general investments in property such as, among others, satellites, wireless devices, set-top boxes, information technology and facilities that support our Pay-TV, Retail Wireless and Broadband and Satellite Services segments. We are also making significant additional investments and may partner with others to, among other things, continue our 5G Network Deployment and further commercialize, build-out and integrate our Wireless spectrum licenses and related assets. Moreover, since we are primarily a subscriber-based company, we also make subscriber-specific investments to acquire new subscribers and retain existing subscribers. While the general investments may be deferred without impacting the business in the short-term, the subscriber-specific investments are less discretionary. Our overall objective is to generate sufficient cash flow over the life of each subscriber to provide an adequate return against the upfront investment. Once the upfront investment has been made for each subscriber, the subsequent cash flow is generally positive, but there can be no assurance that over time we will recoup or earn a return on the upfront investment.

There are a number of factors that impact our future cash flow compared to the cash flow we generate at a given point in time. The first factor is our churn rate and how successful we are at retaining our current subscribers. To the extent we lose subscribers from our existing base, the positive cash flow from that base is correspondingly reduced. The second factor is how successful we are at maintaining our service margins. To the extent our "Cost of services" grow faster than our "Service revenue," the amount of cash flow that is generated per existing subscriber is reduced. Our Pay-TV service margins have been reduced by, among other things, higher programming costs. Our Retail Wireless service margins are impacted by, among other things, our MNSA agreement with T-Mobile and our NSA agreement with AT&T and the speed with which we are able to convert Wireless subscribers onto our 5G Network. The third factor is the rate at which we acquire new subscribers. The faster we acquire new subscribers, the more our positive ongoing cash flow from existing subscribers is offset by the negative upfront cash flow associated with acquiring new subscribers. Conversely, the slower we acquire subscribers, the more our operating cash flow is enhanced in that period.

Finally, our future cash flow is impacted by, among other things, the rate at which we complete our 5G Network Deployment, incur litigation expense, and any cash flow from financing activities. We anticipate operating expenditures for our 5G Network Deployment to increase during 2024 as we continue to, among other things, deploy cell sites and communication towers to commercialize our 5G Network. Since we reached our 5G Network Deployment milestone of 70% of the U.S. population, we expect our capital expenditures will decline in the near term. However, as we prepare for our next build-out requirements in 2025, we expect our capital expenditures to increase as we approach this deadline. As a result, our historical cash flow is not necessarily indicative of our future cash flows. As of December 31, 2023, as a result of, among other things, capital expenditures for our 5G Network Deployment, we experienced negative free cash flow. We expect that this trend will continue in 2024 and in future periods. In addition, declines in our Pay-TV and Wireless subscriber base and any decrease in subscriber-related margins negatively impact our cash flow, and there can be no assurance that our subscriber declines will not continue.

Subscriber Base – Pay TV, Retail Wireless and Broadband and Satellite Services Segments

See "Results of Operations" above for further information.

Subscriber Acquisition and Retention Costs

We incur significant upfront costs to acquire Pay-TV, Wireless and Broadband subscribers, including, but not limited to, advertising, independent third-party retailer incentives, payments made to third parties, equipment and wireless device subsidies, installation services, and/or new customer promotions. While we attempt to recoup these upfront costs over the lives of their subscription, there can be no assurance that we will be successful in achieving that objective. With respect to our DISH TV services and Boost postpaid, we employ business rules such as minimum credit requirements for prospective customers and contractual commitments. We strive to provide outstanding customer service to increase the likelihood of customers keeping their Pay-TV services and Boost postpaid over longer periods of time. Subscriber acquisition costs for SLING TV subscribers are significantly lower than those for DISH TV subscribers. Our subscriber acquisition costs may vary significantly from period to period.

We incur significant costs to retain our existing DISH TV subscribers, generally as a result of upgrading their equipment to next generation receivers, primarily including our Hopper® receivers, and by providing retention credits. As with our subscriber acquisition costs, our retention upgrade spending includes the cost of equipment and installation services. In certain circumstances, we also offer programming at no additional charge and/or promotional pricing for limited periods to existing customers in exchange for a contractual commitment to receive service for a minimum term. A component of our retention efforts includes the installation of equipment for customers who move. Retention costs for Wireless subscribers are primarily related to promotional pricing on upgraded wireless devices for qualified existing subscribers. Our DISH TV and Wireless subscriber retention costs may vary significantly from period to period.

Seasonality

Historically, the first half of the year generally produces fewer gross new DISH TV subscriber activations than the second half of the year, as is typical in the pay-TV industry. In addition, the first and fourth quarters generally produce a lower DISH TV churn rate than the second and third quarters. However, in recent years, as the pay-TV industry has matured, we and our competitors increasingly must seek to attract a greater proportion of new subscribers from each other's existing subscriber bases rather than from first-time purchasers of pay-TV services. As a result, historical trends in seasonality described above may not be indicative of future trends.

Our net SLING TV subscriber additions are impacted by, among other things, certain major sporting events and other major television events. The first and third quarters generally produce higher gross new Wireless subscriber activations. The historical trends discussed above, for net DISH TV subscriber additions, net SLING TV subscriber additions and gross new Wireless subscriber activations, may not be indicative of future trends. There can be no assurance that these trends will not continue and/or accelerate.

Satellites

Pay-TV Segment. Operation of our DISH TV services requires that we have adequate satellite transmission capacity for the programming that we offer. Moreover, competitive conditions may require that we expand our offering of new programming. While we generally have had in-orbit satellite capacity sufficient to transmit our existing channels and some backup capacity to recover the transmission of certain critical programming, our backup capacity is limited. In the event of a failure or loss of any of our owned or leased satellites, we may need to acquire or lease additional satellite capacity or relocate one of our other satellites and use it as a replacement for the failed or lost satellite. Such a failure could result in a prolonged loss of critical programming or a significant delay in our plans to expand programming as necessary to remain competitive and cause us to expend a significant portion of our cash to acquire or lease additional satellite capacity.

Broadband and Satellite Services Segment. Operation of our Broadband and Satellite Services also requires adequate satellite transmission capacity for the services that we offer. Prior to the launch of EchoStar XXIV, we were nearing or had reached capacity in most areas of the U.S., which constrained growth within our consumer subscriber base. These constraints have been addressed by the EchoStar XXIV satellite. In the event of a failure or loss of any of our owned or leased satellites, we may need to acquire or lease additional satellite capacity or relocate one of our other satellites and use it as a replacement for the failed or lost satellite. Such a failure could result in a prolonged loss of services.

Satellite Insurance

We generally do not carry in-orbit insurance on our satellites or payloads because we have assessed that the cost of insurance is not economical relative to the risk of failures. Therefore, we generally bear the risk of any in-orbit failures.

Pursuant to the terms of our joint venture agreement with Al Yah Satellite Communications Company PrJSC (“Yahsat”) in Brazil in 2019, we are required to maintain insurance for the Al Yah 3 Brazilian payload during the commercial in-orbit service of such payload, subject to certain limitations on coverage. The insurance policies were procured by Yahsat, under which we and Yahsat are the beneficiaries of any claims in proportion to their shareholdings. An insurance claim was submitted in the second quarter of 2023 for compensation with respect to the reduction in estimated useful life of the Al Yah 3 satellite.

We also have obtained certain insurance for our EchoStar XXIV satellite covering launch plus the first year of operations. We will continue to assess circumstances going forward and make insurance-related decisions on a case-by-case basis.

Stock Repurchases

Our Board of Directors previously authorized stock repurchases of up to $500 million of our outstanding Class A common stock. On October 20, 2022, our Board of Directors extended this authorization to repurchase up to $500 million of our outstanding Class A common stock through and including December 31, 2023. This program expired December 31, 2023. During the year ended December 31, 2023, there were no repurchases of our Class A common stock. During the years ended December 31, 2022 and 2021, we repurchased 3,980,612 shares and 10,941,872 shares of our Class A common stock, respectively.

Covenants and Restrictions Related to our Long-Term Debt

We are subject to the covenants and restrictions set forth in the indentures related to our long-term debt.

DISH Network and DISH DBS Corporation

The indentures related to our outstanding senior notes issued by DISH DBS Corporation (“DISH DBS”) contain restrictive covenants that, among other things, impose limitations on the ability of DISH DBS and its restricted subsidiaries to: (i) incur additional indebtedness; (ii) enter into sale and leaseback transactions; (iii) pay dividends or make distributions on DISH DBS’ capital stock or repurchase DISH DBS’ capital stock; (iv) make certain investments; (v) create liens; (vi) enter into certain transactions with affiliates; (vii) merge or consolidate with another company; and (viii) transfer or sell assets. The indentures related to our outstanding DISH Network and DISH DBS senior secured notes contain restrictive covenants that, among other things, impose limitations on our ability and certain of our subsidiaries to: (i) incur additional indebtedness; (ii) enter into sale and leaseback transactions; (iii) pay dividends or make distributions on our capital stock or repurchase our capital stock; (iv) make certain investments of spectrum collateral; (v) create liens; (vi) enter into certain transactions with affiliates; (vii) merge or consolidate with another company; and (viii) transfer or sell assets. Should we fail to comply with these covenants, all or a portion of the debt under the senior notes, senior secured notes and our other long-term debt could become immediately payable. The senior notes and senior secured notes also provide that the debt may be required to be prepaid if certain change-in-control events occur. In addition, the Convertible Notes provide that, if a “fundamental change” (as defined in the related indenture) occurs, holders may require us to repurchase for cash all or part of their Convertible Notes. As of the date of filing of this Annual Report on Form 10-K, we, DISH Network and DISH DBS were in compliance with the covenants and restrictions related to our respective long-term debt.

Hughes Satellite Systems Corporation

The indentures related to our outstanding senior notes issued by Hughes Satellite Systems Corporation ("HSSC") contain restrictive covenants that, among other things, impose limitations on the ability of HSSC and its restricted subsidiaries to: (i) incur additional indebtedness; (ii) pay dividends or make distributions on HSSC's capital stock or repurchase HSSC's capital stock; (iii) allow to exist certain restrictions on such subsidiaries' ability to pay dividends, make distributions, make other payments, or transfer assets; (iv) make certain investments; (v) create liens; (vi) enter into certain transactions with affiliates; (vii) merge or consolidate with another company; and (viii) transfer or sell assets. As of the date of filing of this Annual Report on Form 10-K, we and HSSC were in compliance with the covenants and restrictions related to our respective long-term debt.

Other

We are also vulnerable to fraud, particularly in the acquisition of new subscribers. While we are addressing the impact of subscriber fraud through a number of actions, there can be no assurance that we will not continue to experience fraud, which could impact our subscriber growth and churn. Economic weakness may create greater incentive for signal theft, piracy and subscriber fraud, which could lead to higher subscriber churn and reduced revenue.

Obligations and Future Capital Requirements

Contractual Obligations

See Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Future Capital Requirements

We expect to fund our future working capital, capital expenditures, other investments, and debt service requirements from cash generated from operations, existing cash, restricted cash, cash equivalents and marketable investment securities balances, and cash generated through raising additional capital. We may need to make significant additional investments to, among other things, continue our 5G Network Deployment and further commercialize, build-out and integrate our Wireless spectrum licenses and related assets. The amount of capital required to fund our future working capital, capital expenditure and other investment needs varies, depending on, among other things, the rate at which we complete our 5G Network Deployment, the purchase of additional wireless spectrum licenses and the rate at which we acquire new subscribers, and the cost of subscriber acquisition and retention. Certain of our capital expenditures for 2024 are expected to be driven by the rate of our 5G Network Deployment as well as costs associated with subscriber premises equipment. These expenditures are necessary for our 5G Network Deployment as well as to operate and maintain our DISH TV services. Consequently, we consider them to be non-discretionary.

We currently intend to use our cash, cash equivalents and marketable investment securities, and cash flow from operations to pay the March 2024 debt maturity. However, we do not currently have the necessary cash, cash equivalents and marketable investment securities and/or projected future cash flows to fund the November 2024 debt maturity and subsequent interest on our outstanding debt. To address our capital needs, we are in active discussions with funding sources to raise additional capital and restructure our outstanding debt.

Our capital expenditures vary depending on, among other things, the number of satellites leased or under construction at any point in time and could increase materially as a result of increased competition, significant satellite failures, or economic weakness and uncertainty. Our DISH TV subscriber base has been declining and there can be no assurance that our DISH TV subscriber base will not continue to decline and that the pace of such decline will not accelerate. In the event that our DISH TV subscriber base continues to decline, it will have a material adverse long-term effect on our cash flow.

On November 15, 2021 the SNR Put Right was exercised. As of December 31, 2023, the aggregate value of SNR Management's ownership interest in SNR HoldCo was $438 million, recorded as "Redeemable noncontrolling interests" on our Consolidated Balance Sheets.

Subsequent to December 31, 2023, the FCC consented to the sale of SNR Wireless Management, LLC's ("SNR Management") ownership interests in SNR HoldCo, which was purchased by our direct wholly-owned subsidiary EchoStar SNR HoldCo LLC for a total of approximately $442 million on February 16, 2024.

We have and expect to continue to incur expenditures in 2024 related to our 5G Network Deployment, including, but not limited to, capital expenditures associated with our 5G Network Deployment and the potential purchase of additional wireless spectrum licenses. The amount of capital required will also depend on, among other things, our available liquidity, the growth of our Retail Wireless segment and the levels of investment necessary to support potential strategic initiatives that may arise from time to time. These factors, including, but not limited to, a reduction in our available future cash flows as a result of our 5G Network Deployment, will require us to raise additional capital in the future, which may not be available on favorable terms.

Volatility in the financial markets has made it more difficult at times for issuers of high-yield indebtedness, such as us, to access capital markets at favorable terms. These developments may have a significant effect on our cost of financing and our liquidity position.

5G Network Deployment Segment

See Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Availability of Credit and Effect on Liquidity

The ability to raise capital has generally existed for us despite economic weakness and uncertainty. While modest fluctuations in the cost of capital will not likely impact our current operational plans, significant fluctuations could have a material adverse effect on our business, results of operations and financial condition.

Critical Accounting Estimates

The preparation of the consolidated financial statements in conformity with GAAP requires management to make estimates, judgments and assumptions that affect amounts reported therein. Management bases its estimates, judgments and assumptions on historical experience and on various other factors that are believed to be reasonable under the circumstances. Actual results may differ from previously estimated amounts, and such differences may be material to our consolidated financial statements. Estimates and assumptions are reviewed periodically, and the effects of revisions are reflected prospectively in the period they occur. The following represent what we believe are the critical accounting policies that may involve a high degree of estimation, judgment and complexity. For a summary of our significant accounting policies, including those discussed below, see Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K.

Indefinite-Lived Intangible Assets and Goodwill

Valuation of intangible assets with indefinite lives. We evaluate the carrying amount of intangible assets with indefinite lives annually, and also when events and circumstances warrant.

Wireless Spectrum Licenses. During 2022, we acquired the 3.45-3.55 GHz wireless licenses (the "3.45–3.55 GHz Licenses"). During 2021, we acquired the 3550-3650 MHz (CBRS) and 3.7-3.98 GHz wireless licenses, together (the "C-Band Licenses"). During 2020, we acquired the 37 GHz, 39 GHz, and 47 GHz wireless licenses and during 2019, we acquired the 24 GHz and 28 GHz wireless licenses, together (the "High-Band Licenses").

In 2023 and 2022, we combined our 600 MHz, 700 MHz, AWS-4, H Block, High-Band Licenses, C-Band Licenses, 3.45–3.55 GHz Licenses and the Northstar Licenses and SNR Licenses into a single unit of accounting. In 2021, we combined our 600 MHz, 700 MHz, AWS-4, H Block, High-Band Licenses, C-Band Licenses, 3.45–3.55 GHz Licenses and the Northstar Licenses and SNR Licenses into a single unit of accounting.

In 2023, we quantitatively assessed these licenses for impairment. Our quantitative assessment consisted of a market approach performed by a third party and reviewed by management.

Market Approach. Currently frequencies in the 500 kHz to 30 GHz make up the bulk of commercial use in the United States. Spectrum bands can be grouped into four categories: low-band (less than 1 GHz), lower mid-band (1-2 GHz), upper mid-band (primarily 2-4 GHz) and high-band (generally above 24 GHz). Radio frequencies have different characteristics with regard to the distance they will travel and their ability to penetrate structures. Lower band frequency bands require less power to travel large distances and propagate well providing geographic coverage, whereas higher bandwidth spectrum is favored in urban settings where the goal is increased data capacity and cell sites are dense, with limited coverage areas.

Spectrum is licensed by geographic areas that can vary from the size of a county to significantly larger expanses. Licenses can cover densely populated urban areas to sparsely populated rural regions. Pricing for spectrum licenses will vary, sometimes significantly based on the frequency, population area or restrictions associated with the authorization for use obtained from the FCC. Population or "Pop" is a key input to valuing each geographic license. The amount of spectrum included in a license is measured in terms of megahertz, referred to as "MHz." The wider the band the greater the MHz.

The market approach assessed the value of our spectrum using benchmarks, based on market transactions, which may include spectrum auctions and secondary market transactions, either acquisitions of spectrum or of businesses for which spectrum values can reliably be inferred. The market approach looked at the value of each band of our spectrum by block and geographic area based on pairing the spectrum in a manner that yielded its highest and best use. Prices were then calculated on an amount per MHz-Pop basis (where the numerator is the total value of the licenses and the denominator is the product of the population and MHz) based upon the most relevant data points. Finally, a discount was applied to the analysis for lack of marketability on certain of our holdings based on sale restrictions associated with those specific bands.

Our spectrum holdings include low-band, lower mid-band, upper mid-band (collectively referred to as "Low-Mid Band Licenses") and high-band licenses.

As part of our impairment assessment we performed the market approach during the fourth quarter of 2023 and concluded that the fair value of these licenses are substantially in excess of their carrying value.

Changes in circumstances or market conditions could result in a write-down of any of the above Wireless spectrum licenses in the future.

Goodwill. We test goodwill for impairment at the reporting unit level, which includes, among others, the SLING TV, DISH TV, Retail Wireless, 5G Network Deployment and Hughes reporting units. Historically the majority of our goodwill relates to the Hughes reporting unit within our Broadband and Satellite Services segment and the Retail Wireless and 5G Network Deployment segments. Our impairment assessment is detailed by segment below.

We perform our annual impairment assessment for goodwill and other indefinite-lived intangible assets each year during the fourth quarter or more frequently if events or changes in circumstances indicate an impairment may be possible. We previously performed our annual impairment assessment for goodwill during the second quarter and changed the testing date due to the Merger in order to align the testing date between all reporting units. The change in testing date does not result in a material change in the method of our goodwill impairment assessment. We may consider qualitative factors to assess if it is more likely than not that the fair value for goodwill is below the carrying amount. If we determine in the qualitative assessment that it is more likely than not that the fair value is less than its carrying value, then we perform a quantitative assessment to determine the estimated fair value of the reporting unit. We may also elect to bypass the qualitative assessment and perform a quantitative assessment.

Our assessment process included, among other things, discounted cash flow analyses, consideration of fair values of tangible and indefinite-lived intangible assets held by the reporting units and our recent market capitalization. Our assessment indicated the goodwill attributed to certain acquisitions was no longer supported based on the sustained decrease in our market capitalization. As such, we recorded a total noncash impairment charge of approximately $758 million in "Impairment of long-lived assets and goodwill" on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Income Taxes

Our income tax policy is to record the estimated future tax effects of temporary differences between the tax bases of assets and liabilities and amounts reported in the accompanying consolidated balance sheets, as well as operating loss and tax credit carryforwards. Determining necessary valuation allowances requires us to make assessments about the timing of future events, including the probability of expected future taxable income and available tax planning opportunities. We periodically evaluate our need for a valuation allowance based on both historical evidence, including trends, and future expectations in each reporting period. Any such valuation allowance is recorded in either “Income tax (provision) benefit, net” on our Consolidated Statements of Operations and Comprehensive Income (Loss) or “Accumulated other comprehensive income (loss)” within “Stockholders’ Equity (Deficit)” on our Consolidated Balance Sheets. Future performance could have a significant effect on the realization of tax benefits, or reversals of valuation allowances, as reported in our consolidated results of operations.

Management evaluates the recognition and measurement of uncertain tax positions based on applicable tax law, regulations, case law, administrative rulings and pronouncements and the facts and circumstances surrounding the tax position. Changes in our estimates related to the recognition and measurement of the amount recorded for uncertain tax positions could result in significant changes in our “Income tax provision (benefit), net,” which could be material to our consolidated results of operations.

Although we believe our assumptions, judgments and estimates are reasonable, changes in tax laws or our interpretation of tax laws and the resolution of any tax audits could significantly impact the amounts provided for income taxes in our consolidated financial statements.

Contingent Liabilities

A significant amount of management judgment is required in determining when, or if, an accrual should be recorded for a contingency and the amount of such accrual. Estimates generally are developed in consultation with counsel and are based on an analysis of potential outcomes. Due to the uncertainty of determining the likelihood of a future event occurring and the potential financial statement impact of such an event, it is possible that upon further development or resolution of a contingent matter, a charge could be recorded in a future period to “Selling, general and administrative expenses” or “Litigation expense” on our Consolidated Statements of Operations and Comprehensive Income (Loss) that would be material to our consolidated results of operations and financial condition.

Backlog

See “Broadband and Satellite Services Segment” above for further information.

New Accounting Pronouncements

See Note 2 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risks Associated with Financial Instruments

Our investments and debt are exposed to market risks, discussed below.

Cash, Cash Equivalents and Current Marketable Investment Securities

As of December 31, 2023, our cash, cash equivalents and current marketable investment securities had a fair value of $2.444 billion. Of that amount, a total of $2.277 billion was invested in: (a) cash; (b) money market funds; (c) debt instruments of the United States Government and its agencies; (d) commercial paper and corporate notes with an overall average maturity of less than one year and rated in one of the four highest rating categories by at least two nationally recognized statistical rating organizations; and/or (e) instruments with similar risk, duration and credit quality characteristics to the commercial paper and corporate obligations described above. The primary purpose of these investing activities has been to preserve principal until the cash is required to, among other things, continue investing in our business, pursue acquisitions and other strategic transactions, fund ongoing operations, repay debt obligations and expand our business. Consequently, the size of this portfolio can fluctuate significantly as cash is received and used in our business for these or other purposes. The value of this portfolio is negatively impacted by credit losses; however, this risk is mitigated through diversification that limits our exposure to any one issuer.

Interest Rate Risk

A change in interest rates would affect the fair value of our cash, cash equivalents and current marketable investment securities portfolio; however, we normally hold these investments to maturity. Based on our December 31, 2023 current non-strategic investment portfolio of $2.277 billion, a hypothetical 10% change in average interest rates would not have a material impact on the fair value due to the limited duration of our investments.

Our cash, cash equivalents and current marketable investment securities had an average annual rate of return for the year ended December 31, 2023 of 5.1%. A change in interest rates would affect our future annual interest income from this portfolio, since funds would be re-invested at different rates as the instruments mature. A hypothetical 10% decrease in average interest rates during 2023 would result in a decrease of approximately $18 million in annual interest income.

Strategic Marketable Investment Securities

As of December 31, 2023, we held investments in the publicly traded securities of several companies with a fair value of $167 million. These investments, which are held for strategic and financial purposes, are concentrated in a small number of companies, are highly speculative and have historically experienced, and continue to experience volatility. The fair value of these investments are subject to significant fluctuations in fair value and can be significantly impacted by the risk of adverse changes in securities markets generally, as well as risks related to the performance of the companies whose securities we have invested in, risks associated with specific industries and other factors. In general, our strategic marketable investment securities portfolio is not significantly impacted by interest rate fluctuations as it currently consists primarily of equity securities, the value of which is more closely related to factors specific to the underlying business. A hypothetical 10% adverse change in the market price of our public strategic equity investments during 2023 would have resulted in a decrease of $17 million in the fair value of these investments.

Restricted Cash, Cash Equivalents and Marketable Investment Securities

As of December 31, 2023, we had $118 million of restricted cash and marketable investment securities invested in: (a) cash; (b) money market funds; (c) debt instruments of the United States Government and its agencies; and/or (d) instruments with similar risk, duration and credit quality characteristics to commercial paper. Based on our December 31, 2023 investment portfolio, a hypothetical 10% increase in average interest rates would not have a material impact on the fair value of our restricted cash and marketable investment securities.

Foreign Currency Exchange Risk

Our international business is conducted in a variety of foreign currencies with our largest exposures being to the Brazilian real, the Indian rupee, European euro and the British pound. Transactions in foreign currencies are converted into U.S. dollars using exchange rates in effect on the dates of the transactions. This exposes us to fluctuations in foreign currency exchange rates.

Our objective in managing our exposure to foreign currency changes is to reduce earnings and cash flow volatility associated with foreign currency exchange rate fluctuations, primarily resulting from loans to foreign subsidiaries in U.S. dollars. Accordingly, we may enter into foreign currency forward contracts, or take other measures, to mitigate risks associated with foreign currency denominated assets, liabilities, commitments and anticipated foreign currency transactions. As of December 31, 2023, we had foreign currency forward contracts with a notional amount of less than $1 million in place to partially mitigate foreign currency exchange risk. The estimated fair values of the foreign currency contracts were not material as of December 31, 2023. The impact of a hypothetical 10% adverse change in exchange rates on the carrying amount of the net assets and liabilities of our foreign subsidiaries during 2023 would have resulted in an estimated loss to the cumulative translation adjustment of $43 million as of December 31, 2023.

Long-Term Debt

As of December 31, 2023, we had long-term debt of $22.710 billion, excluding finance lease obligations and unamortized deferred financing costs and debt discounts, on our Consolidated Balance Sheets. We estimated the fair value of this debt to be approximately $17.844 billion using quoted market prices. The fair value of our debt is affected by fluctuations in interest rates. A hypothetical 10% decrease in assumed interest rates would increase the fair value of our debt by approximately $688 million. To the extent interest rates increase, our future costs of financing would increase at the time of any future financings. As of December 31, 2023, all of our long-term debt consisted of fixed rate indebtedness.

Derivative Financial Instruments

From time to time, we invest in speculative financial instruments, including derivatives. As of December 31, 2023, we did not hold any material derivative financial instruments other than the option to purchase certain T-Mobile's 800 MHz spectrum licenses under the Spectrum Purchase Agreement. See Note 6 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Our consolidated financial statements are included in this Annual Report on Form 10-K beginning on page F-1.

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

Item 9A. CONTROLS AND PROCEDURES

Disclosure controls and procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Principal Financial Officer, we evaluated the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934) as of the end of the period covered by this report. Based upon that evaluation, our Chief Executive Officer and Principal Financial Officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report.

Changes in internal control over financial reporting

As a result of the Merger, our internal control over financial reporting (as defined by Rule 13a-15(f) under the Securities and Exchange Act of 1934) changed during our most recent fiscal quarter. We determined that the Merger involved the transfer of a business, which for entities under common control required the retrospective combination of DISH Network into the Company for all periods presented using the historical cost basis of the acquired assets. For the consolidated entity, we implemented new internal controls to record the retrospective combination and associated financial reporting. Further, as DISH Network was material to EchoStar, we adopted many aspects of DISH Network's control environment for our internal control over financial reporting.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with United States generally accepted accounting principles.

Our internal control over financial reporting includes those policies and procedures that:

(i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect our transactions and dispositions of our assets;

(ii) provide reasonable assurance that our transactions are recorded as necessary to permit preparation of our financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and our directors; and

(iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on our 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 policies or procedures may deteriorate.

Our management 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 this evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2023.

The effectiveness of our internal control over financial reporting as of December 31, 2023 has been audited by KPMG LLP, an independent registered public accounting firm, as stated in their report which appears in Item 15(a) of this Annual Report on Form 10-K.

Item 9B. OTHER INFORMATION

10b5-1 Trading Arrangements

None of the Company's directors or Section 16 officers adopted, modified or terminated a Rule 10b5-1 trading arrangement or a non-Rule 10b5-1 trading arrangement during the Company's fiscal quarter ended December 31, 2023, as such terms are defined under Item 408(a) of Regulation S-K.

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 this Item will be set forth in our Proxy Statement for the 2023 Annual Meeting of Shareholders, which information is hereby incorporated herein by reference.

The information required by this Item with respect to the identity and business experience of our executive officers is set forth under the caption "Information About Our Executive Officers" in this Annual Report on Form 10-K.

Item 11. EXECUTIVE COMPENSATION

The information required by this Item will be set forth in our Proxy Statement for the 2023 Annual Meeting of Shareholders, which information is hereby incorporated herein by reference.

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item will be set forth in our Proxy Statement for the 2023 Annual Meeting of Shareholders, which information is hereby incorporated herein by reference.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this Item will be set forth in our Proxy Statement for the 2023 Annual Meeting of Shareholders, which information is hereby incorporated herein by reference.

Item 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this Item will be set forth in our Proxy Statement for the 2023 Annual Meeting of Shareholders, which information is hereby incorporated herein by reference.

PART IV

Item 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this report:

(1) *Financial Statements*

	Page
Report of KPMG LLP, Independent Registered Public Accounting Firm	F-2
Consolidated Balance Sheets	F-5
Consolidated Statements of Operations and Comprehensive Income (Loss)	F-6
Consolidated Statements of Changes in Stockholders' Equity (Deficit)	F-7
Consolidated Statements of Cash Flows	F-8
Notes to Consolidated Financial Statements	F-9

(2) Financial Statement Schedules

None. All schedules have been included in the consolidated financial statements or notes thereto.

(3) *Exhibits*

2.1*	Asset Purchase Agreement, dated as of July 26, 2019, by and among T-Mobile US, Inc., Sprint Corporation and DISH Network Corporation (incorporated by reference from Exhibit 2.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed July 29, 2019).
2.2*	First Amendment to the Asset Purchase Agreement, dated June 17, 2020, by and between DISH Network and NTM (incorporated by reference from Exhibit 99.1 of the Current Report on Form 8-K of DISH Network Corporation filed June 17, 2020).

2.3	Amended and Restated Agreement and Plan of Merger, dated as of October 2, 2023, by and among EchoStar Corporation, DISH Network Corporation and EAV Corp. (incorporated by reference from Exhibit 2.1 to EchoStar's Current Report on Form 8-K filed on October 3, 2023).*
3.1☐	Amended and Restated Articles of Incorporation of EchoStar Corporation.
3.2☐	Amended and Restated Bylaws of EchoStar Corporation.
4.1*	Specimen Class A Common Stock Certificate of EchoStar Corporation (incorporated by reference to Exhibit 4.1 to Amendment No. 1 of EchoStar Corporation's Form 10 filed December 12, 2007, Commission File No. 001-33807).
4.2*	Security Agreement, dated as of June 8, 2011, among EH Holding Corporation (currently known as Hughes Satellite Systems Corporation), the guarantors listed on the signature pages thereto, and U.S. Bank National Association, as successor collateral agent (incorporated by reference to Exhibit 4.1 to EchoStar Corporation's Current Report on Form 8-K filed June 9, 2011, Commission File No. 001-33807).
4.3*	Indenture, relating to the 5 7/8% Senior Notes due 2024, dated as of November 20, 2014 among DISH DBS Corporation, the guarantors named on the signature pages thereto and U.S. Bank National Association, as Trustee (incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed November 21, 2014).
4.4*	Indenture, relating to the 7 3/4% Senior Notes due 2026, dated as of June 13, 2016, among DISH DBS Corporation, the guarantors named on the signature pages thereto and U.S. Bank National Association, as Trustee (incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed June 13, 2016).
4.5*	Indenture, relating to the 5.250% Senior Secured Notes, dated as of July 27, 2016, among Hughes Satellite Systems Corporation, the guarantors party thereto, U.S. Bank National Association, as trustee and successor collateral agent (incorporated by reference to Exhibit 4.1 to EchoStar Corporation's Current Report on Form 8-K filed on July 27, 2016, Commission File No. 001-33807).
4.6*	Indenture, relating to the 6.625% Senior Unsecured Notes, dated as of July 27, 2016, among Hughes Satellite Systems Corporation, the guarantors party thereto and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 to EchoStar Corporation's Current Report on Form 8-K filed on July 27, 2016, Commission File No. 001-33807).
4.7*	Additional Secured Party Joinder, dated as of July 27, 2016, among U.S. Bank National Association, as trustee and successor collateral agent, and Hughes Satellite Systems Corporation (incorporated by reference to Exhibit 4.4 to EchoStar Corporation's Current Report on Form 8-K filed on July 27, 2016, Commission File No. 001-33807).
4.8*	Indenture, relating to the 3 3/8% Convertible Notes due 2026, dated as of August 8, 2016, by and between DISH Network Corporation and U.S. Bank National Association, as Trustee (incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed August 8, 2016).
4.9*	Indenture, relating to the 2 3/8% Convertible Notes due 2024, dated as of March 17, 2017, by and between DISH Network Corporation and U.S. Bank National Association, as Trustee (incorporated by reference from Exhibit 4.1 to the Current Report on Form 8 K of DISH Network Corporation filed March 20, 2017).

4.10*	Supplemental Indenture relating to Hughes Satellite Systems Corporation's 5.250% Senior Secured Notes due 2026, dated March 23, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto, U.S. Bank National Association, as trustee and successor collateral agent (incorporated by reference to Exhibit 4.19 to Hughes Satellite Systems Corporation's Registration Statement on Form S-4, filed April 6, 2017, Commission File No. 333-179121).
4.11*	Supplemental Indenture relating to Hughes Satellite Systems Corporation's 6.625% Senior Notes due 2026, dated as of March 23, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.20 to Hughes Satellite Systems Corporation's Registration Statement on Form S-4, filed April 6, 2017, Commission File No. 333- 179121).
4.12*	Joinder Agreement, dated as of August 10, 2017, to the Security Agreement dated as of June 8, 2011, by and between HNS Americas, L.L.C., HNS Americas II, L.L.C. and U.S. Bank National Association, as successor collateral agent (incorporated by reference to Exhibit 4.24 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, filed February 22, 2018, Commission File No. 001-33807).
4.13*	Second Supplemental Indenture relating to Hughes Satellite Systems Corporation's 5.250% Senior Secured Notes due 2026, dated August 10, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto, U.S. Bank National Association, as trustee and successor collateral agent (incorporated by reference to Exhibit 4.25 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, filed February 22, 2018, Commission File No. 001-33807).
4.14*	Second Supplemental Indenture relating to Hughes Satellite Systems Corporation's 6.625% Senior Notes due 2026, dated as of August 10, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.26 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, filed February 22, 2018, Commission File No. 001-33807).
4.15*	Supplemental Indenture relating to the 5 7/8% Senior Notes due 2024 (incorporated by reference from Exhibit 4.15 to the Annual Report on Form 10-K of DISH DBS Corporation filed March 29, 2018).
4.16*	Supplemental Indenture relating to the 7 3/4% Senior Notes due 2026 (incorporated by reference from Exhibit 4.16 to the Annual Report on Form 10-K of DISH DBS Corporation filed March 29, 2018).
4.17*	Joinder Agreement, dated as of June 12, 2019, to the Security Agreement dated as of June 8, 2011, by and between EchoStar BSS Corporation, EchoStar FSS L.L.C. and U.S. Bank National Association, as successor collateral agent (incorporated by reference to Exhibit 4.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 001-33807).
4.18*	Third Supplemental Indenture relating to Hughes Satellite Systems Corporation's 5.250% Senior Secured Notes due 2026, dated June 12, 2019, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantors listed on the signature pages thereto, U.S. Bank National Association, as trustee and successor collateral agent (incorporated by reference to Exhibit 4.2 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 001-33807).

4.19*	Third Supplemental Indenture relating to Hughes Satellite Systems Corporation's 6.625% Senior Notes due 2026, dated as of June 12, 2019, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantors listed on the signature pages thereto and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.3 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 001-33807).
4.20*	Indenture, relating to the 7 3/8% Senior Notes due 2028, dated as of July 1, 2020, among DISH DBS Corporation, the guarantors named on the signature pages thereto and U.S. Bank National Association, as Trustee (incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed July 1, 2020).
4.21*	Indenture, relating to the 0% Convertible Notes due 2025, dated as of December 21, 2020, by and between DISH Network Corporation and U.S. Bank National Association, as Trustee (incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed December 22, 2020).
4.22*	First Supplemental Indenture, relating to the DISH 3.375% Convertible Notes due 2026, dated as of December 29, 2023, among DISH Network Corporation, EchoStar Corporation and U.S. Bank Trust Company, National Association (as successor to U.S. Bank National Association), as Trustee (incorporated by reference from Exhibit 4.2 to the Current Report on Form 8-K of EchoStar Corporation filed January 2, 2024).
4.23*	First Supplemental Indenture, relating to the DISH 2.375% Convertible Notes due 2024, dated as of December 29, 2023, among DISH Network Corporation, EchoStar Corporation and U.S. Bank Trust Company, National Association (as successor to U.S. Bank National Association), as Trustee (incorporated by reference from Exhibit 4.4 to the Current Report on Form 8-K of EchoStar Corporation filed January 2, 2024).
4.24*	First Supplemental Indenture, relating to the DISH 0% Convertible Notes due 2025, dated as of December 29, 2023, among DISH Network Corporation, EchoStar Corporation and U.S. Bank Trust Company, National Association (as successor to U.S. Bank National Association), as Trustee (incorporated by reference from Exhibit 4.6 to the Current Report on Form 8-K of EchoStar Corporation filed January 2, 2024).

4.25*	Indenture, relating to the 5 1/8% Senior Notes due 2029, dated as of May 24, 2021 among DISH DBS Corporation, the guarantors named on the signature pages thereto and U.S. Bank, National Association, as Trustee (incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed May 24, 2021).
4.26*	Indenture, relating to the 5 1/4% Senior Secured Notes due 2026 and the 5 3/4% Senior Secured Notes due 2028, dated as of November 26, 2021, among DISH DBS Corporation, the guarantors named on the signature pages thereto and U.S. Bank National Association, as Trustee and Collateral Agent (incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed November 26, 2021).
4.27*	Security Agreement, dated as of November 26, 2021, among DISH DBS Corporation, the guarantors named on the signature pages thereto and U.S. Bank National Association, as Collateral Agent (incorporated by reference from Exhibit 4.2 to the Current Report on Form 8-K of DISH Network Corporation filed November 26, 2021).
4.28*	Loan and Security Agreement, dated as of November 26, 2021, between DISH DBS Corporation and DISH Network Corporation (incorporated by reference from Exhibit 4.3 to the Current Report on Form 8-K of DISH Network Corporation filed November 26, 2021).
4.29*	Secured Indenture, relating to the 11.75% Senior Secured Notes due 2027, dated as of November 15, 2022, among DISH Network Corporation, the guarantors named on the signature pages thereto and U.S. Bank Trust Company, National Association, as trustee and collateral agent (incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed January 26, 2023).
4.30*	Security Agreement, dated as of November 15, 2022, among the secured guarantors named on the signature pages thereto and U.S. Bank Trust Company, National Association, as collateral agent (incorporated by reference from Exhibit 4.2 to the Current Report on Form 8-K of DISH Network Corporation filed November 15, 2022).
4.31*	Description of our Capital Stock ((incorporated by reference to Exhibit 4.25 to EchoStar Corporations' Annual Report on Form 10-K for the year ended December 31, 2019, filed February 20, 2020, Commission File No. 001-33807).
10.1*	Form of EchoStar Corporation 2008 Class B CEO Stock Option Plan (incorporated by reference to Exhibit 10.25 to Amendment No. 1 of EchoStar Corporation's Form 10 filed December 12, 2007, Commission File No. 001-33807).**
10.2*	Amended and Restated EchoStar Corporation 2008 Stock Incentive Plan (the "2008 Stock Incentive Plan") (incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed September 18, 2014, Commission File No. 001-33807).**
10.3*	Amended and Restated EchoStar Corporation 2008 Non-Employee Director Stock Option Plan (the "2008 Non-Employee Director Stock Option Plan") (incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed March 31, 2009, Commission File No. 001-33807).**
10.4*	Form of Restricted Stock Unit Agreement for 2008 Stock Incentive Plan — Executive or Director (incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015, filed November 6, 2015, Commission File No. 001-33807).**
10.5*	Form of Stock Option Agreement for 2008 Stock Incentive Plan (1999) (incorporated by reference to Exhibit 10.39 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807).**

10.6*	Form of Stock Option Agreement for 2008 Stock Incentive Plan — Employee (2008) (incorporated by reference to Exhibit 10.40 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807).**
10.7*	Form of Stock Option Agreement for 2008 Stock Incentive Plan — Executive (2008) (incorporated by reference to Exhibit 10.41 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807).**
10.8*	Form of Stock Option Agreement for 2008 Stock Incentive Plan — Employee (2014) (incorporated by reference to Exhibit 10.42 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807).**
10.9*	Form of Stock Option Agreement for 2008 Stock Incentive Plan — Executive (2014) (incorporated by reference to Exhibit 10.43 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807). **
10.10*	Form of Non-Employee Director Stock Option Agreement for 2008 Non-Employee Director Stock Option Plan (incorporated by reference to Exhibit 10.44 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807). **
10.11*	Form of Restricted Stock Unit Agreement for 2008 Stock Incentive Plan — Executive or Director (2011) (incorporated by reference to Exhibit 10.45 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807).**
10.12*	EchoStar Corporation 2017 Stock Incentive Plan (incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed March 23, 2017, Commission File No. 001-33807).**
10.13*	EchoStar Corporation 2017 Non-Employee Director Stock Incentive Plan (incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed March 23, 2017, Commission File No. 001-33807).**
10.14*	Amended and Restated EchoStar Corporation 2017 Employee Stock Purchase Plan (incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed March 23, 2017, Commission File No. 001-33807).**
10.15*	Amendment No. 1 to EchoStar Corporation 2017 Amended and Restated Employee Stock Purchase Plan dated October 20, 2022 (incorporated by reference to Exhibit 10.5 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2022, filed November 3, 2022, Commission File No. 001-33807)**
10.16*	EchoStar Non-Qualified Plan -- Executive Plan and Adoption Agreement, as amended (incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807).**
10.17*	Form of Stock Option Agreement for the EchoStar Corporation 2017 Stock Incentive Plan - Employee (2017) (incorporated by reference to Exhibit 10.2 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807).**
10.18*	Form of Stock Option Agreement for the EchoStar Corporation 2017 Stock Incentive Plan - Executive (2017) (incorporated by reference to Exhibit 10.3 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807). **

10.19*	Form of Non-Employee Director Stock Option Agreement for the EchoStar Corporation 2017 Non-Employee Director Stock Incentive Plan (incorporated by reference to Exhibit 10.4 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807).**
10.20*	Form of Restricted Stock Unit Agreement for the EchoStar Corporation 2017 Stock Incentive Plan - Executive (2017) (incorporated by reference to Exhibit 10.5 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807).**
10.21*	Form of Stock Option Agreement for the EchoStar Corporation 2017 Stock Incentive Plan — Employee (2022) (incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2022, filed November 3, 2022, Commission File No. 001-33807)**
10.22*	Form of Stock Option Agreement for the EchoStar Corporation 2017 Stock Incentive Plan — Executive (2022) (incorporated by reference to Exhibit 10.2 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2022, filed November 3, 2022, Commission File No. 001-33807) **
10.23*	Form of Non-Employee Director Stock Option Agreement for the EchoStar Corporation 2017 Non-Employee Director Stock Incentive Plan (2022) (incorporated by reference to Exhibit 10.3 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2022, filed November 3, 2022, Commission File No. 001-33807)**
10.24*	Form of Restricted Stock Unit Agreement for the EchoStar Corporation 2017 Stock Incentive Plan — Executive (2022) (incorporated by reference to Exhibit 10.4 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2022, filed November 3, 2022, Commission File No. 001-33807) **
10.25*	Form of Stock Option Agreement for Hamid Akhavan (incorporated by reference to Exhibit 10.2 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2022, filed May 5, 2022, Commission File No. 001-33807)**
10.26*	Form of Restricted Stock Unit Agreement for Hamid Akhavan (incorporated by reference to Exhibit 10.3 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2022, filed May 5, 2022, Commission File No. 001-33807)**
10.27*	Amendment to EchoStar Non-Qualified Plan -- Executive Plan and Adoption Agreement, dated November 1, 2018 (incorporated by reference to Exhibit 10.35 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2018, filed February 21, 2019, Commission File No. 001-33807).**
10.28*	Amended and Restated EchoStar Corporation Executive Officer Bonus Incentive Plan, dated as of April 30, 2019 (incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 001-33807).**
10.29*	Amendment to EchoStar Non-Qualified Plan – Executive Plan and Adoption Agreement, dated October 21, 2019 (incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, filed November 5, 2020, Commission File No. 001-33807). **
10.30*	Amendment No. 1 to EchoStar Corporation 2017 Non-Employee Director Stock Incentive Plan (incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Schedule 14A, filed March 17, 2021, Commission File No. 001- 33807). **

10.31*	Second Amended and Restated EchoStar Corporation Executive Officer Bonus Incentive Plan, dated as of November 2, 2021 (incorporated by reference to Exhibit 10.30 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2021, filed February 24, 2022, Commission File No. 001-33807). **
10.32*	2002 Class B CEO Stock Option Plan (incorporated by reference from Appendix A to DISH Network Corporation's Definitive Proxy Statement on Schedule 14A dated April 9, 2002). **
10.33*	Nonemployee Director Stock Option Agreement (incorporated by reference to Exhibit 99.6 to the Current Report on Form 8-K of DISH Network Corporation filed July 7, 2005). **
10.34*	DISH Network Corporation 2009 Stock Incentive Plan (incorporated by reference to Appendix A to DISH Network Corporation's Definitive Proxy Statement on Form 14A filed September 19, 2014). **
10.35*	Amended and Restated DISH Network Corporation 2001 Nonemployee Director Stock Option Plan (incorporated by reference to Appendix B to DISH Network Corporation's Definitive Proxy Statement on Form 14A filed March 31, 2009). **
10.36*	Amended and Restated DISH Network Corporation 1999 Stock Incentive Plan (incorporated by reference to Appendix C to DISH Network Corporation's Definitive Proxy Statement on Form 14A filed March 31, 2009). **
10.37*	Guaranty of Certain Obligations to FCC, dated as of October 1, 2015, made by DISH Network Corporation in favor of the Federal Communications Commission (Northstar Wireless) (incorporated by reference from Exhibit 10.2 to the Current Report on Form 8-K of DISH Network Corporation filed October 2, 2015).
10.38*	Guaranty of Certain Obligations to FCC, dated as of October 1, 2015, made by DISH Network Corporation in favor of the Federal Communications Commission (SNR Wireless) (incorporated by reference from Exhibit 10.4 to the Current Report on Form 8-K of DISH Network Corporation filed October 2, 2015).
10.39*	Form of Base/Additional Note Hedge Transaction Confirmation (incorporated by reference from Exhibit 10.1 to the Current Report on Form 8-K of DISH Network Corporation filed August 8, 2016).
10.40*	Form of Base/Additional Warrant Transaction Confirmation (incorporated by reference from Exhibit 10.2 to the Current Report on Form 8-K of DISH Network Corporation filed August 8, 2016).
10.41*	Description of the 2017 Long-Term Incentive Plan dated December 2, 2016 (incorporated by reference from the Current Report on Form 8-K of DISH Network Corporation filed December 8, 2016). **
10.42*	Description of the 2019 Long-Term Incentive Plan dated August 17, 2018 (incorporated by reference from the Current Report on Form 8-K of DISH Network Corporation filed August 23, 2018). **
10.43*	Incentive Stock Option Agreement (incorporated by reference from Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed November 6, 2020). **
10.44*	Non-Qualified Stock Option Agreement (incorporated by reference from Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed November 6, 2020). **
10.45*	Restricted Stock Unit Agreement (incorporated by reference from Exhibit 10.3 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed November 6, 2020). **

10.46*	Master Network Service Agreement, dated as of July 1, 2020, by and among DISH Network Corporation, DISH Purchasing Corporation, and T-Mobile USA, Inc. (incorporated by reference from Exhibit 10.4 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed November 6, 2020).
10.47*	License Purchase Agreement, dated as of July 1, 2020, by and among DISH Network Corporation and T-Mobile USA, Inc. (incorporated by reference from Exhibit 10.5 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed November 6, 2020).
10.48*	Network Services Agreement, dated as of July 14, 2021, by and among DISH Wireless L.L.C. and AT&T Mobility LLC (incorporated by reference from Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed November 4, 2021).***
10.49*	Amended and Restated Support Agreement, dated as of October 2, 2023, by and among DISH Network, EchoStar and the Ergen Stockholders (attached to the prospectus which forms a part of this registration statement as Annex B) (incorporated by reference from Exhibit 10.1 to the Amendment No. 1 on Form S-4 of EchoStar filed on November 6, 2023).
10.50*	Letter Agreement, dated as of October 2, 2023, by and between EchoStar and Hamid Akhavan (incorporated by reference from Exhibit 10.2 to the Amendment No. 1 on Form S-4 of EchoStar filed on November 6, 2023).**
10.51*	Letter Agreement, dated as of October 2, 2023, by and between EchoStar and John W. Swieringa (incorporated by reference from Exhibit 10.3 to the Amendment No. 1 on Form S-4 of EchoStar filed on November 6, 2023).**
10.52*	Registration Rights Agreement, dated as of December 31, 2023, among EchoStar Corporation, Charles W. Ergen, Cantey M. Ergen and the other signatories thereto (incorporated by reference from Exhibit 10.1 to EchoStar's Current Report on Form 8-K filed on January 2, 2024).
10.53*	Form of Warrant Amendment Letter Agreement (incorporated by reference from Exhibit 4.8 to EchoStar's Current Report on Form 8-K filed on January 2, 2024).
10.54*	Form of Warrant Guarantee (incorporated by reference from Exhibit 4.9 to EchoStar's Current Report on Form 8-K filed on January 2, 2024).
10.55*	Form of Note Hedge Amendment Letter Agreement (incorporated by reference from Exhibit 4.11 to EchoStar's Current Report on Form 8-K filed on January 2, 2024).
21☐	Subsidiaries of EchoStar Corporation.
23☐	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
24☐	Power of Attorney authorizing Dean A. Manson as signatory for Charles W. Ergen, Kathleen Q. Abernathy, George R. Brokaw, Stephen J. Bye, James DeFranco, R. Stanton Dodge, Cantey M. Ergen, Lisa W. Hershman, Tom A. Ortolf and William David Wade.

31.1☐ Section 302 Certification of Chief Executive Officer.

31.2☐ Section 302 Certification of Principal Financial Officer.

32.1☐ Section 906 Certification of Chief Executive Officer.

32.2☐ Section 906 Certification of Principal Financial Officer.

97.1☐ EchoStar Corporation's Clawback Policy.

99.1* Department of Justice CDMA Letter to Defendants dated July 9, 2021 (incorporated by reference from Exhibit 99.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed August 9, 2021).

101☐ The following materials from the Annual Report on Form 10-K of EchoStar Corporation for the year ended December 31, 2023, filed on February 29, 2024, formatted in Inline eXtensible Business Reporting Language ("iXBRL"): (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations and Comprehensive Income (Loss), (iii) Consolidated Statement of Changes in Stockholders' Equity (Deficit), (iv) Consolidated Statements of Cash Flows, and (v) related notes to these financial statements.

104☐ Cover Page Interactive Data File (the cover page XBRL tags are embedded in the Inline XBRL document.

☐ Filed herewith.

* Incorporated by reference.

** Constitutes a management contract or compensatory plan or arrangement.

*** Certain portions of the exhibit have been omitted and separately filed with the Securities and Exchange Commission with a request for confidential treatment.

Item 16. FORM 10-K SUMMARY

None

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ECHOSTAR CORPORATION

By: /s/ *Paul W. Orban*
Paul W. Orban
Executive Vice President and Chief Financial Officer, DISH
(Principal Financial Officer and Principal Accounting Officer)

Date: February 29, 2024

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Hamid Akhavan Hamid Akhavan	President and Chief Executive Officer and Director *(Principal Executive Officer)*	February 29, 2024
/s/ Paul W. Orban Paul W. Orban	Executive Vice President and Chief Financial Officer, DISH *(Principal Financial Officer and Principal Accounting Officer)*	February 29, 2024
* Charles W. Ergen	Chairman	February 29, 2024
* Kathleen Q. Abernathy	Director	February 29, 2024
* George R. Brokaw	Director	February 29, 2024
* Stephen J. Bye	Director	February 29, 2024
* James DeFranco	Director	February 29, 2024
* R. Stanton Dodge	Director	February 29, 2024
* Cantey M. Ergen	Director	February 29, 2024
* Lisa W. Hershman	Director	February 29, 2024
* Tom A. Ortolf	Director	February 29, 2024
* William D. Wade	Director	February 29, 2024

* By: /s/ *Dean A. Manson*
Dean A. Manson
Attorney-in-Fact

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors
EchoStar Corporation:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of EchoStar Corporation and subsidiaries (the Company) as of December 31, 2023 and 2022, the related consolidated statements of operations and comprehensive income (loss), changes in stockholders' equity (deficit), and cash flows for each of the years in the three-year period ended December 31, 2023, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2023, 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 consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022 and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2023, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2023 based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company has debt maturing in 2024 and expects to use a substantial amount of cash in the next twelve months. This raises substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, 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 Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements 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. 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 audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates 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 a critical audit matter 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 matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Sufficiency of audit evidence over revenue

As discussed in Note 16 to the consolidated financial statements, the Company reported $17.0 billion in total revenue for the year ended December 31, 2023, which included Pay-TV, Retail Wireless, and Broadband and Satellite Services revenue of $11.6 billion, $3.7 billion, and $1.7 billion, respectively. These categories of revenue have multiple revenue streams and certain aspects of the Company's processes and information technology (IT) systems differ among the revenue streams.

We identified the evaluation of sufficiency of audit evidence over certain revenue streams as a critical audit matter. Specifically, subjective auditor judgment was required to evaluate that revenue data was captured and aggregated throughout these various IT applications. Additionally, IT professionals with specialized skills and knowledge were required to evaluate the nature and extent of evidence obtained over certain revenue streams.

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 revenue. For each revenue stream where procedures were performed, we evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's revenue recognition process, including recording of revenue. We also evaluated the design and tested the operating effectiveness of certain general IT and application controls. We involved IT professionals with specialized skills and knowledge, who assisted in testing certain IT applications used by the Company in its revenue recognition processes and the transfer of relevant revenue data between certain systems used in the revenue recognition processes. For certain revenue streams, we assessed the recorded revenue by comparing total cash received during the year, adjusted for reconciling items, to the revenue recognized. Such assessment also evaluated the relevance and reliability of reconciling items to underlying documentation, including the changes in accounts receivable and deferred revenue. For other revenue streams, we assessed the recorded amounts by sampling transactions or confirming the price and quantity of items sold with third-party customers. Additionally, for other revenue streams we performed a software-assisted data analysis to test relationships among certain revenue transactions. Through these procedures we then compared the amounts recognized for consistency with underlying documentation, including contracts or payment and transaction support. We evaluated the sufficiency of audit evidence obtained by assessing the results of the procedures performed, including the appropriateness of the nature and extent of such evidence.

/s/ KPMG LLP

We have served as the Company's auditor since 2002.

Denver, Colorado
February 29, 2024

ECHOSTAR CORPORATION
CONSOLIDATED BALANCE SHEETS
(Dollars in thousands, except share amounts)

	As of	
	December 31, 2023	**December 31, 2022**
Assets		
Current Assets:		
Cash and cash equivalents	$ 1,821,376	$ 2,497,536
Marketable investment securities	623,044	1,809,898
Trade accounts receivable, net of allowance for credit losses of $74,390 and $59,790, respectively	1,122,139	1,182,597
Inventory	665,169	625,979
Prepaids and other assets	644,005	617,819
Other current assets	16,081	23,884
Total current assets	4,891,814	6,757,713
Noncurrent Assets:		
Restricted cash, cash equivalents and marketable investment securities	118,065	117,011
Property and equipment, net	9,561,834	7,904,957
Regulatory authorizations, net	38,572,980	37,395,604
Other investments, net	314,370	524,905
Operating lease assets	3,065,448	2,823,834
Intangible assets, net	172,892	1,113,298
Other noncurrent assets, net	411,491	2,110,959
Total noncurrent assets	52,217,080	51,990,568
Total assets	$ 57,108,894	$ 58,748,281
Liabilities and Stockholders' Equity (Deficit)		
Current Liabilities:		
Trade accounts payable	$ 774,011	$ 1,023,537
Deferred revenue and other	754,658	833,213
Accrued programming	1,427,762	1,298,777
Accrued interest	297,678	298,043
Other accrued expenses and liabilities	1,717,826	1,436,485
Current portion of long-term debt and finance lease obligations (Note 10)	3,046,654	1,552,559
Total current liabilities	8,018,589	6,442,614
Long-Term Obligations, Net of Current Portion:		
Long-term debt and finance lease obligations, net of current portion (Note 10)	19,717,266	21,343,561
Deferred tax liabilities, net	5,014,309	5,354,756
Operating lease liabilities	3,121,307	2,808,774
Long-term deferred revenue and other long-term liabilities	849,131	748,384
Total long-term obligations, net of current portion	28,702,013	30,255,475
Total liabilities	36,720,602	36,698,089
Commitments and Contingencies (Note 15)		
Redeemable noncontrolling interests (Note 2)	438,382	464,359
Stockholders' Equity (Deficit):		
Class A common stock, $0.001 par value, 1,600,000,000 shares authorized, 140,153,020 and 138,128,368 shares issued and outstanding, respectively	140	138
Class B common stock, $0.001 par value, 800,000,000 shares authorized, 131,348,468 shares issued and outstanding	131	131
Additional paid-in capital	8,301,979	8,222,599
Accumulated other comprehensive income (loss)	(160,056)	(175,267)
Accumulated earnings (deficit)	11,737,983	13,440,040
Total EchoStar stockholders' equity (deficit)	19,880,177	21,487,641
Noncontrolling interests	69,733	98,192
Total stockholders' equity (deficit)	19,949,910	21,585,833
Total liabilities and stockholders' equity (deficit)	$ 57,108,894	$ 58,748,281

The accompanying notes are an integral part of these consolidated financial statements.

ECHOSTAR CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME (LOSS)
(Dollars in thousands, except per share amounts)

	For the Years Ended December 31,		
	2023	2022	2021
Revenue:			
Service and other revenue	$ 16,145,763	$ 17,596,265	$ 18,598,313
Equipment sales and other revenue	869,835	1,037,981	1,220,365
Total revenue	17,015,598	18,634,246	19,818,678
Costs and Expenses (exclusive of depreciation and amortization):			
Cost of services	9,510,427	10,111,341	10,717,333
Cost of sales - equipment and other	2,434,904	2,099,136	1,778,471
Selling, general and administrative expenses	2,989,154	3,015,325	2,686,279
Depreciation and amortization	1,597,923	1,174,895	1,213,946
Impairment of long-lived assets and goodwill (Note 2)	761,099	711	245
Total costs and expenses	17,293,507	16,401,408	16,396,274
Operating income (loss)	(277,909)	2,232,838	3,422,404
Other Income (Expense):			
Interest income, net	207,374	93,240	33,903
Interest expense, net of amounts capitalized	(90,357)	(79,217)	(111,151)
Other, net (Note 6)	(1,770,792)	1,088,441	4,716
Total other income (expense)	(1,653,775)	1,102,464	(72,532)
Income (loss) before income taxes	(1,931,684)	3,335,302	3,349,872
Income tax (provision) benefit, net	296,860	(798,410)	(828,437)
Net income (loss)	(1,634,824)	2,536,892	2,521,435
Less: Net income (loss) attributable to noncontrolling interests, net of tax	67,233	59,172	35,150
Net income (loss) attributable to EchoStar	$ (1,702,057)	$ 2,477,720	$ 2,486,285
Weighted-average common shares outstanding - Class A and B common stock:			
Basic	270,842	270,102	275,117
Diluted	270,842	307,733	313,122
Earnings per share - Class A and B common stock:			
Basic net income (loss) per share attributable to EchoStar	$ (6.28)	$ 9.17	$ 9.04
Diluted net income (loss) per share attributable to EchoStar	$ (6.28)	$ 8.05	$ 7.94
Comprehensive Income (Loss):			
Net income (loss)	$ (1,634,824)	$ 2,536,892	$ 2,521,435
Other comprehensive income (loss):			
Foreign currency translation adjustments	19,129	35,449	(22,274)
Unrealized holding gains (losses) on available-for-sale debt securities	(306)	536	(694)
Recognition of previously unrealized (gains) losses on available-for-sale securities included in net income (loss)	550	(25)	(25)
Deferred income tax (expense) benefit, net	(512)	(359)	519
Other	—	2,660	(5,005)
Total other comprehensive income (loss), net of tax	18,861	38,261	(27,479)
Comprehensive income (loss)	(1,615,963)	2,575,153	2,493,956
Less: Comprehensive income (loss) attributable to noncontrolling interests, net of tax	70,883	60,879	30,761
Comprehensive income (loss) attributable to EchoStar	$ (1,686,846)	$ 2,514,274	$ 2,463,195

The accompanying notes are an integral part of these consolidated financial statements.

ECHOSTAR CORPORATION
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY (DEFICIT)
(In thousands)

	Class A and B Common Stock	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Earnings (Deficit)	Treasury Shares at Cost (Note 2)	Noncontrolling Interests	Total	Redeemable Noncontrolling Interests
Balance, December 31, 2020	$ 266	$ 8,727,300	$ (188,731)	$ 8,826,948	$ —	$ 65,405	$ 17,431,188	$ 350,648
Issuance of Class A common stock:								
Exercise of stock awards	—	40,971	—	—	—	—	40,971	—
Employee benefits	1	37,445	—	—	—	—	37,446	—
Employee Stock Purchase Plan	1	27,210	—	—	—	—	27,211	—
Non-cash, stock-based compensation	—	59,379	—	—	—	—	59,379	—
Other comprehensive income (loss):	—	—	(23,090)	—	—	(4,389)	(27,479)	—
Convertible debt reclassified per ASU 2020-06, net of deferred taxes of $245,778 (Note 2)	—	(805,566)	—	—	—	—	(805,566)	—
Contribution by non-controlling interest holder	—	—	—	—	—	9,880	9,880	—
Treasury share repurchase	—	—	—	—	(261,609)	—	(261,609)	—
Other, net	—	(750)	—	(261,609)	261,609	—	(750)	—
Net income (loss) attributable to noncontrolling interests	—	—	—	—	—	(9,424)	(9,424)	44,574
Net income (loss) attributable to EchoStar	—	—	—	2,486,285	—	—	2,486,285	—
Balance, December 31, 2021	$ 268	$ 8,085,989	$ (211,821)	$ 11,051,624	$ —	$ 61,472	$ 18,987,532	$ 395,222
Issuance of Class A common stock:								
Exercise of stock awards	—	200	—	—	—	—	200	—
Employee benefits	—	33,389	—	—	—	—	33,389	—
Employee Stock Purchase Plan	1	27,238	—	—	—	—	27,239	—
Non-cash, stock-based compensation	—	82,994	—	—	—	—	82,994	—
Other comprehensive income (loss):	—	—	36,554	—	—	1,707	38,261	—
Issuance of equity and contribution of assets pursuant to the India JV formation	—	(14,237)	—	—	—	44,540	30,303	—
Consideration received from DISH Network for R&D tax credits utilized	—	6,315	—	—	—	—	6,315	—
Treasury share repurchase	—	—	—	—	(89,303)	—	(89,303)	—
Other, net	—	711	—	(89,304)	89,303	438	1,148	—
Net income (loss) attributable to noncontrolling interests	—	—	—	—	—	(9,965)	(9,965)	69,137
Net income (loss) attributable to EchoStar	—	—	—	2,477,720	—	—	2,477,720	—
Balance, December 31, 2022	$ 269	$ 8,222,599	$ (175,267)	$ 13,440,040	$ —	$ 98,192	$ 21,585,833	$ 464,359
Issuance of Class A common stock:								
Exercise of stock awards	—	(1,444)	—	—	—	—	(1,444)	—
Employee benefits	1	20,100	—	—	—	—	20,101	—
Employee Stock Purchase Plan	1	12,041	—	—	—	—	12,042	—
Non-cash, stock-based compensation	—	51,514	—	—	—	—	51,514	—
Other comprehensive income (loss)	—	—	15,211	—	—	3,650	18,861	—
Other, net	—	(2,831)	—	—	—	(439)	(3,270)	—
Purchase of Northstar Manager, LLC's ownership interest in Northstar Spectrum	—	—	—	—	—	—	—	(109,432)
Deconsolidation of Hughes Systique Corporation	—	—	—	—	—	(15,448)	(15,448)	—
Net income (loss) attributable to noncontrolling interests	—	—	—	—	—	(16,222)	(16,222)	83,455
Net income (loss) attributable to EchoStar	—	—	—	(1,702,057)	—	—	(1,702,057)	—
Balance, December 31, 2023	$ 271	$ 8,301,979	$ (160,056)	$ 11,737,983	$ —	$ 69,733	$ 19,949,910	$ 438,382

The accompanying notes are an integral part of these consolidated financial statements.

ECHOSTAR CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	For the Years Ended December 31,		
	2023	2022	2021
Cash Flows From Operating Activities:			
Net income (loss)	$ (1,634,824)	$ 2,536,892	$ 2,521,435
Adjustments to reconcile net income (loss) to net cash flows from operating activities:			
Depreciation and amortization	1,597,923	1,174,895	1,213,946
Impairment of long-lived assets and goodwill	761,099	711	245
Realized and unrealized losses (gains) on investments, impairments and other	(46,888)	(72,371)	(7,541)
Realized and unrealized losses (gains) on derivatives	1,693,387	(1,015,387)	13,000
Non-cash, stock-based compensation	51,514	82,994	59,379
Deferred tax expense (benefit)	(337,222)	729,587	639,708
Changes in allowance for credit losses	14,600	6,590	(34,635)
Change in long-term deferred revenue and other long-term liabilities	15,825	83,453	65,943
Other, net	166,383	253,784	135,871
Changes in current assets and current liabilities, net			
Trade accounts receivable	20,622	(74,812)	206,995
Prepaid and accrued income taxes	15,836	(36,115)	81,197
Inventory	(37,981)	16,200	(175,918)
Other current assets	(40,290)	21,737	(47,144)
Trade accounts payable	4,108	90,721	86,219
Deferred revenue and other	(78,555)	(71,709)	(62,034)
Accrued programming and other accrued expenses	267,110	(105,980)	(41,293)
Net cash flows from operating activities	2,432,647	3,621,190	4,655,373
Cash Flows From Investing Activities:			
Purchases of marketable investment securities	(2,407,546)	(1,965,859)	(6,338,641)
Sales and maturities of marketable investment securities	3,710,544	4,159,830	4,390,903
Purchases of property and equipment	(3,100,921)	(3,050,472)	(1,619,312)
Refunds and other receipts of purchases of property and equipment	38,611	—	—
Capitalized interest related to regulatory authorizations (Note 2)	(1,162,473)	(984,309)	(777,885)
Proceeds from other debt investments	148,448	—	—
Refund of regulatory authorizations deposit	—	—	337,490
Purchases of regulatory authorizations, including deposits	(2,009)	(7,206,865)	(122,657)
Other, net	(33,386)	(11,900)	(116,621)
Net cash flows from investing activities	(2,808,732)	(9,059,575)	(4,246,723)
Cash Flows From Financing Activities:			
Repayment of long-term debt and finance lease obligations	(121,981)	(86,229)	(89,958)
Redemption and repurchases of senior notes	(1,460,635)	(2,056,821)	(2,901,818)
Proceeds from issuance of senior notes	1,500,000	2,000,000	6,750,000
Repurchases of convertible notes	(182,834)	—	—
Early debt extinguishment gains (losses)	73,024	—	—
Net proceeds from Class A common stock options exercised and stock issued under the Employee Stock Purchase Plan	10,598	27,438	68,182
Purchase of Northstar Manager, LLC's ownership interest in Northstar Spectrum	(109,432)	—	—
Treasury share repurchase	—	(89,303)	(261,436)
Debt issuance costs and debt (discount) premium	21,635	(51,121)	(34,459)
Other, net	(7,496)	(18,413)	(15,507)
Net cash flows from financing activities	(277,121)	(274,449)	3,515,004
Effect of exchange rates on cash and cash equivalents	3,004	(2,306)	(3,749)
Net increase (decrease) in cash, cash equivalents, restricted cash and cash equivalents	(650,202)	(5,715,140)	3,919,905
Cash, cash equivalents, restricted cash and cash equivalents, beginning of period (Note 5)	2,561,803	8,276,943	4,357,038
Cash, cash equivalents, restricted cash and cash equivalents, end of period (Note 5)	$ 1,911,601	$ 2,561,803	$ 8,276,943

The accompanying notes are an integral part of these consolidated financial statements.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization and Business Activities

Principal Business

EchoStar Corporation is a holding company that was organized in October 2007 as a corporation under the laws of the State of Nevada. Its subsidiaries (which together with EchoStar Corporation are referred to as "EchoStar," the "Company," "we," "us" and/or "our," unless otherwise required by the context).

Recent Developments

Merger with DISH Network

On December 31, 2023, we completed the acquisition of DISH Network pursuant to the Amended and Restated Agreement and Plan of Merger, dated as of October 2, 2023 (the "Amended Merger Agreement"), by and among us, EAV Corp., a Nevada corporation and our wholly owned subsidiary ("Merger Sub"), and DISH Network, pursuant to which we acquired DISH Network by means of the merger of Merger Sub with and into DISH Network (the "Merger"), with DISH Network surviving the Merger as our wholly owned subsidiary.

On the terms and subject to the conditions set forth in the Amended Merger Agreement, on December 31, 2023, at 11:59 p.m. ET (the "Effective Time"), each share of DISH Network Class A common stock, par value $0.01 per share ("DISH Network Class A Common Stock") and DISH Network Class C common stock, par value $0.01 per share ("DISH Network Class C Common Stock") outstanding immediately prior to the Effective Time, was converted into the right to receive a number of validly issued, fully paid and non-assessable shares of EchoStar Class A common stock, par value $0.001 per share ("EchoStar Class A Common Stock") equal to 0.350877 (the "Exchange Ratio"). On the terms and subject to the conditions set forth in the Amended Merger Agreement, at the Effective Time, each share of DISH Network Class B common stock, par value $0.01 per share ("DISH Network Class B Common Stock" and, together with DISH Network Class A Common Stock and DISH Network Class C Common Stock, "DISH Network Common Stock"), outstanding immediately prior to the Effective Time was converted into the right to receive a number of validly issued, fully paid and non-assessable shares of EchoStar Class B common stock, par value $0.001 per share (the "EchoStar Class B Common Stock" and, together with the EchoStar Class A Common Stock, the "EchoStar Common Stock"), equal to the Exchange Ratio. Any shares of DISH Network Common Stock that were held in DISH Network's treasury or held directly by us or Merger Sub immediately prior to the Effective Time were cancelled and cease to exist and no consideration was paid in respect thereof. All shares of the DISH Network Class A Common Stock were delisted from the Nasdaq Global Select Market ("NASDAQ") and deregistered under the Securities Exchange Act of 1934, as amended.

The EchoStar Common Stock issued to the Ergen DISH Stockholders (as defined in the Amended Merger Agreement) as Merger consideration was issued through a private placement exemption from registration under the Securities Act of 1933, as amended (the "Securities Act"). At the Effective Time, each share of DISH Network Class A Common Stock owned by the Ergen DISH Stockholders immediately prior to the Effective Time was converted into the right to receive a number of shares of EchoStar Class A Common Stock equal to the Exchange Ratio, and (b) each share of DISH Network Class B Common Stock owned by the Ergen DISH Stockholders immediately prior to the Effective Time was converted into the right to receive a number of shares of EchoStar Class B Common Stock equal to the Exchange Ratio.

Concurrently with the entry into the Amended Merger Agreement, the Ergen EchoStar Stockholders (as defined in the Amended Merger Agreement), the Ergen DISH Stockholders (collectively, the "Ergen Stockholders"), we and DISH Network entered into an amended and restated support agreement (the "Amended Support Agreement").

In connection with the completion of the Merger, and pursuant to the Amended and Restated Support Agreement, the Ergen Stockholders, we and DISH Network, on December 31, 2023, we and the Ergen Stockholders entered into a registration rights agreement (the "Registration Rights Agreement").

The Registration Rights Agreement provides the Ergen Stockholders, and their affiliates who become parties thereto, with certain registration rights relating to the shares of EchoStar Common Stock, which they beneficially own, including (i) the right to demand shelf registration as well as registration on long and short form registration statements and (ii) "piggyback" registration rights to be included in future registered offerings by us of our equity securities, in each case, subject to certain requirements and customary conditions. The Registration Rights Agreement sets forth customary registration procedures, including an agreement by us to make appropriate officers available to participate in roadshow presentations and cooperate as reasonably requested in connection with any underwritten offerings. We also agreed to indemnify the Ergen Stockholders and their affiliates with respect to liabilities resulting from untrue statements or omissions in any registration statement used in any such registration, other than untrue statements or omissions based on or contained in information furnished to us for use in a registration statement by a participating stockholder.

For more information and a copy of the Amended Merger Agreement, the Amended Support Agreement and the Registration Rights Agreement, see the Form 8-K of EchoStar Corporation filed on October 3, 2023 and the Form 8-K of EchoStar Corporation filed on January 2, 2024.

With the Merger complete, we are currently focused on the process of integrating our and DISH Network's business in a manner that facilitates synergies, cost savings, growth opportunities and achieves other anticipated benefits (the "Integration").

Future Capital Requirements

The consolidated financial statements have been prepared in accordance with generally accepted accounting principles on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business.

Our cash and cash equivalents and marketable investment securities totaled $2.4 billion as of December 31, 2023 ("Cash on Hand"). As reflected in the consolidated financial statements as of December 31, 2023, we have $951 million and $1.98 billion of debt maturing in March and November 2024, respectively, as well as a $438 million obligation related to the SNR put right. We satisfied the SNR obligation out of Cash on Hand on February 16, 2024, and for calendar year 2024 are forecasting negative cash flows.

Because we do not currently have committed financing to fund our operations for at least twelve months from the issuance of these consolidated financial statements, substantial doubt exists about our ability to continue as a going concern. We currently intend to use Cash on Hand and cash flow from operations to pay the March 2024 debt maturity. However, we do not currently have the necessary Cash on Hand and/or projected future cash flows to fund the November 2024 debt maturity and subsequent interest on our outstanding debt. To address our capital needs, we are in active discussions with funding sources to raise additional capital and restructure our outstanding debt. We cannot provide assurances that we will be successful in obtaining such new financing and/or restructuring the existing debt obligations necessary for us to have sufficient liquidity. Further, if we are not successful in these endeavors, then capital expenditures to meet future FCC build out requirements and wireless customer growth initiatives will be adversely affected.

The consolidated financial statements do not include any adjustments to the amount and classification of assets and liabilities that may be necessary should we not continue as a going concern.

Segments

We currently operate four primary business segments: (1) Pay-TV; (2) Retail Wireless; (3) 5G Network Deployment; and (4) Broadband and Satellite Services.

Pay-TV

We offer pay-TV services under the DISH® brand and the SLING® brand (collectively “Pay-TV” services). The DISH branded pay-TV service consists of, among other things, Federal Communications Commission (“FCC”) licenses authorizing us to use direct broadcast satellite (“DBS”) and Fixed Satellite Service (“FSS”) spectrum, our owned and leased satellites, receiver systems, broadcast operations, a leased fiber optic network, in-home service and call center operations, and certain other assets utilized in our operations (“DISH TV”). We also design, develop and distribute receiver systems and provide digital broadcast operations, including satellite uplinking/downlinking, transmission and other services to third-party pay-TV providers. The SLING branded pay-TV services consist of, among other things, multichannel, live-linear and on-demand streaming over-the-top (“OTT”) Internet-based domestic, international, Latino and Freestream video programming services (“SLING TV”). As of December 31, 2023, we had 8.526 million Pay-TV subscribers in the United States, including 6.471 million DISH TV subscribers and 2.055 million SLING TV subscribers.

Retail Wireless

We offer nationwide prepaid and postpaid retail wireless services to subscribers primarily under our Boost Mobile®, Boost postpaid and Gen Mobile® brands (“Retail Wireless” services), as well as a competitive portfolio of wireless devices. Prepaid wireless subscribers generally pay in advance for monthly access to wireless talk, text, and data services. Postpaid wireless subscribers are qualified to pay after receiving wireless talk, text, and data services, and may also qualify for financing arrangements for wireless devices.

We are currently operating our Retail Wireless segment primarily as a mobile virtual network operator (“MVNO”) as we continue our 5G Network Deployment and commercialize our 5G Network, as defined below. We are transitioning our Retail Wireless segment to a mobile network operator (“MNO”) as our 5G Network becomes commercially available and we are currently activating subscribers onto our 5G Network in markets where we have reached voice over new radio (“VoNR”). As an MVNO, today we depend on T-Mobile and AT&T to provide us with network services under the amended Master Network Services Agreement (“MNSA”) and Network Services Agreement (the “NSA”), respectively. Under the NSA, we expect AT&T will become our primary network services provider. As of December 31, 2023, we had 7.378 million Wireless subscribers.

Other Developments

We regularly evaluate ways to enhance our business. As part of this process, we are in regular dialogue with interested parties who may assist us in accomplishing our goals, including ongoing conversations with CONX Corp. (an entity partially owned by Charles W. Ergen, our Chairman) regarding a transaction involving our Retail Wireless segment. There can be no assurance that these discussions will lead to a transaction nor as to the structure or terms of any such transaction.

5G Network Deployment

We have invested a total of over $30 billion in Wireless spectrum licenses, which includes over $10 billion in initial noncontrolling investments in certain entities. The $30 billion of investments related to Wireless spectrum licenses does not include $9 billion of capitalized interest related to the carrying value of such licenses. See Note 2 and Note 15 for further information.

We will need to raise additional capital in the future, which may not be available on favorable terms, to fund the efforts described below, as well as, among other things, make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. There can be no assurance that we will be able to profitably deploy these Wireless spectrum licenses, which may affect the carrying amount of these assets and our future financial condition or results of operations. See Note 15 for further information.

DISH Network Spectrum

We have invested a total of over $30 billion to acquire certain Wireless spectrum licenses. These Wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. We plan to commercialize our Wireless spectrum licenses through the completion of the nation’s first cloud-native, Open Radio Access Network (“O-RAN”) based 5G network (our “5G Network Deployment”). We have committed to deploy a facilities-based 5G broadband network (our “5G Network”) capable of serving increasingly larger portions of the U.S. population at different deadlines, including 20% of the U.S. population by June 2022 and 70% of the U.S. population by June 2023. If by June 2023, we are offering 5G broadband service to at least 50% of the U.S. population but less than 70% of the U.S. population, the 70% June 2023 deadline will be extended automatically to June 2025; however, as a result, we may, under certain circumstances, potentially be subject to certain penalties. On June 14, 2022, we announced we had successfully reached our 20% population coverage requirement. In addition, we announced and certified to the FCC that as of June 14, 2023, we offer 5G broadband service to over 73% of the U.S. population, or more than 246 million Americans nationwide. On September 29, 2023, the FCC confirmed we have met all of our June 14, 2023 band-specific 5G deployment commitments, and two of our three nationwide 5G commitments. The single remaining 5G commitment, that at least 70% of the U.S. population has access to average download speeds equal to 35 Mbps, will be confirmed using the drive test methodology agreed to and approved by the FCC. We have six months from September 29, 2023 to complete this drive test. We now have the largest commercial deployment of 5G VoNR in the world reaching approximately 200 million Americans and 5G broadband service reaching approximately 250 million Americans.

As a result of us providing 5G broadband service to over 50% of the U.S. population by June 14, 2023, the final build-out deadlines have been extended automatically to June 14, 2025 for us to offer 5G broadband service to at least 70% of the population in each Economic Area for the 700 MHz Licenses and AWS-4 Licenses and at least 75% of the population in each Economic Area for the H Block Licenses.

We may need to make significant additional investments or partner with others to, among other things, continue our 5G Network Deployment and further commercialize, build-out and integrate these licenses and related assets and any additional acquired licenses and related assets, as well as to comply with regulations applicable to such licenses. Depending on the nature and scope of such activities, any such investments or partnerships could vary significantly. In addition, as we continue our 5G Network Deployment, we have and may continue to incur significant additional expenses related to, among other things, research and development, wireless testing and ongoing upgrades to the wireless network infrastructure, software and third-party integration. As a result of these investments, among other factors, we plan to raise additional capital, which may not be available on favorable terms. We may also determine that additional wireless spectrum licenses may be required for our 5G Network Deployment and to compete effectively with other wireless service providers. See Note 15 for further information.

DISH Network Noncontrolling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses

During 2015, through our wholly-owned subsidiaries American AWS-3 Wireless II L.L.C. ("American II") and American AWS-3 Wireless III L.L.C. ("American III"), we initially made over $10 billion in certain noncontrolling investments in Northstar Spectrum, LLC ("Northstar Spectrum"), the parent company of Northstar Wireless, L.L.C. ("Northstar Wireless," and collectively with Northstar Spectrum, the "Northstar Entities"), and in SNR Wireless HoldCo, LLC ("SNR HoldCo"), the parent company of SNR Wireless LicenseCo, LLC ("SNR Wireless," and collectively with SNR HoldCo, the "SNR Entities"), respectively. On October 27, 2015, the FCC granted certain AWS-3 wireless spectrum licenses (the "AWS-3 Licenses") to Northstar Wireless and to SNR Wireless, respectively, which are recorded in "Regulatory authorizations, net" on our Consolidated Balance Sheets.

Under the applicable accounting guidance in Accounting Standards Codification 810, *Consolidation* ("ASC 810"), Northstar Spectrum and SNR HoldCo are considered variable interest entities ("VIEs") and, based on the characteristics of the structure of these entities and in accordance with the applicable accounting guidance, we consolidate these entities into our financial statements. On October 12, 2023, the FCC consented to the sale of Northstar Manager, LLC's ("NorthStar Manager") ownership interests in Northstar Spectrum, which we purchased for a total of approximately $109 million. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to Northstar Spectrum as of the purchase date and we continue to consolidate the Northstar Entities as wholly-owned subsidiaries. Subsequent to December 31, 2023, the FCC consented to the sale of SNR Wireless Management, LLC's ("SNR Management") ownership interests in SNR HoldCo, which was purchased by our direct wholly-owned subsidiary EchoStar SNR HoldCo LLC for a total of approximately $442 million on February 16, 2024. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to SNR HoldCo as of the purchase date and we continue to consolidate the SNR Entities as wholly-owned subsidiaries. See Note 2 for further information.

Broadband and Satellite Services

We offer broadband satellite technologies and broadband internet products and services to consumer customers. We provide broadband network technologies, managed services, equipment, hardware, satellite services and communications solutions to government and enterprise customers. We also design, provide and install gateway and terminal equipment to customers for other satellite systems. In addition, we design, develop, construct and provide telecommunication networks comprising satellite ground segment systems and terminals to mobile system operators and our enterprise customers. We also offer a robust suite of integrated, multi-transport solutions to enable airline and airline service providers to deliver reliable in-flight network connectivity serving both commercial and business aviation. As of December 31, 2023, we had 1.004 million Broadband subscribers.

Our EchoStar XXIV satellite began service in December 2023, bringing additional broadband capacity across North and South America and is expected to be an integral part of our satellite service business. Revenue in our satellite services business depends largely on our ability to make continuous use of our available satellite capacity on behalf of existing customers and our ability to enter into commercial relationships with new customers.

Other Developments

Cyber-Security Incident

On February 23, 2023, DISH Network experienced a network outage that affected its internal servers and IT telephony. We immediately activated our incident response and business continuity plans designed to contain, remediate and recover from the situation. We engaged the services of certain cyber-security experts and outside advisors to assist in the evaluation of the situation, and once we determined that the outage was due to a cybersecurity incident, we promptly notified appropriate law enforcement authorities.

On February 28, 2023, we further disclosed that certain data had been extracted from the DISH Network IT systems. Our investigation into the extent of the incident is now completed. We determined that our customer databases were not accessed, however, we confirmed that certain employee-related records as well as a limited number of other records containing certain personal information were among the data extracted. We took steps to protect the affected records, received confirmation that the extracted data was deleted and notified individuals whose data was extracted.

The DISH TV, SLING TV and Retail Wireless services, along with our wireless and data networks remained operational at all times during the incident. As of March 31, 2023, all significant systems had been restored.

During the first quarter of 2023, we incurred substantially all of our cyber-security-related expenses for this matter, including, but not limited to, costs to remediate the incident and provide additional customer support. During the second, third and fourth quarters of 2023, we did not incur additional material expenses resulting from the cyber-security incident and do not expect to incur material expenses in future periods. During the year ended December 31, 2023, we incurred approximately $30 million in cyber-security-related expenses, which are recorded in “Cost of services” on our Consolidated Statements of Operations and Comprehensive Income (Loss).

2. Summary of Significant Accounting Policies

Principles of Consolidation and Basis of Presentation

The accompanying consolidated financial statements include all balances and results of operations of EchoStar and our consolidated subsidiaries and are prepared in conformity with U.S. generally accepted accounting principles (“GAAP”). We consolidate all majority owned subsidiaries, investments in entities in which we have controlling influence and VIEs where we have been determined to be the primary beneficiary. Minority interests are recorded as noncontrolling interests or redeemable noncontrolling interests. See below for further information. Non-consolidated investments are accounted for using the equity method when we have the ability to significantly influence the operating decisions of the investee. When we do not have the ability to significantly influence the operating decisions of an investee, these equity securities are classified as either marketable investment securities or other investments, which will be initially recorded at cost, and based on observable market prices, will be adjusted to their fair value. We record fair value adjustments in “Other, net” within “Other Income (Expense)” on our Consolidated Statements of Operations and Comprehensive Income (Loss). All significant intercompany accounts and transactions have been eliminated in consolidation. Certain prior period amounts have been reclassified to conform to the current period presentation.

Merger with DISH Network. Prior to the Merger, Charles W. Ergen and Cantey M. Ergen were the controlling stockholders of each of EchoStar and DISH Network and they continue to be the controlling stockholders of EchoStar after the Merger. Therefore, the Merger has been accounted for as a transaction between entities under common control in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 805, *Business Combinations*, Subtopic 50, *Related Issues*, with EchoStar considered as the receiving entity because EchoStar issued equity in connection with the Merger. Accordingly, upon the completion of the Merger, on December 31, 2023, EchoStar recorded DISH Network’s net assets at their carrying value, with no additional goodwill or other intangible assets recognized.

Upon the completion of the Merger, the net assets of DISH Network have been combined with those of EchoStar at their historical carrying amounts and DISH Network and EchoStar are presented on a combined basis for all historical periods that the companies were under common control. Shares of EchoStar Common Stock issued to holders of DISH Network Common Stock in exchange for the outstanding shares of DISH Network Common Stock were recorded at par value and historical weighted average basic and diluted shares of DISH Network have been adjusted by the Exchange Ratio and included in the weighted average shares outstanding on our consolidated statements of operations. EchoStar reissued treasury shares as part of the EchoStar share issuance upon the completion of the Merger. The accompanying consolidated statements of cash flows for the years ended December 31, 2022 and 2021 include cash repurchases of the treasury shares that were reissued in connection with closing of the Merger. Intercompany transactions between EchoStar and DISH Network have been eliminated from all historical periods.

Redeemable Noncontrolling Interests

Northstar Wireless. Northstar Wireless is a wholly-owned subsidiary of Northstar Spectrum, which is an entity owned by Northstar Manager and us. Under the applicable accounting guidance in ASC 810, Northstar Spectrum is considered a VIE and, based on the characteristics of the structure of this entity and in accordance with the applicable accounting guidance, we consolidate Northstar Spectrum into our financial statements. The Northstar Operative Agreements, as amended, provide for, among other things, that Northstar Manager has the ability, but not the obligation, to require Northstar Spectrum to purchase Northstar Manager’s ownership interests in Northstar Spectrum (the “Northstar Put Right”) for a purchase price that equals its equity contribution to Northstar Spectrum plus a fixed annual rate of return.

The First Northstar Put Window closed in the first quarter of 2021. On October 21, 2022, we, through our wholly-owned subsidiary American II received notice that Northstar Manager exercised the Northstar Put Right effective as of October 21, 2022. As of December 31, 2022, the aggregate value of the Northstar Put Right accrued to $96 million. On October 12, 2023, the FCC consented to the sale of Northstar Manager’s ownership interests in Northstar Spectrum, which we purchased for a total of approximately $109 million. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to Northstar Spectrum as of the purchase date and we continue to consolidate the Northstar Entities as wholly-owned subsidiaries.

Northstar Spectrum does not have a call right with respect to Northstar Manager’s ownership interests in Northstar Spectrum. Although Northstar Manager is the sole manager of Northstar Spectrum, Northstar Manager’s ownership interest was considered temporary equity under the applicable accounting guidance and was recorded as part of “Redeemable noncontrolling interests” in the mezzanine section of our Consolidated Balance Sheets. Northstar Manager’s ownership interest in Northstar Spectrum was initially accounted for at fair value. Subsequently, Northstar Manager’s ownership interest in Northstar Spectrum was increased by the fixed annual rate of return through “Redeemable noncontrolling interests” on our Consolidated Balance Sheets, with the offset recorded in “Net income (loss) attributable to noncontrolling interests, net of tax” on our Consolidated Statements of Operations and Comprehensive Income (Loss). The operating results of Northstar Spectrum attributable to Northstar Manager were recorded as “Redeemable noncontrolling interests” on our Consolidated Balance Sheets, with the offset recorded in “Net income (loss) attributable to noncontrolling interests, net of tax” on our Consolidated Statements of Operations and Comprehensive Income (Loss). See Note 15 for further information.

SNR Wireless. SNR Wireless is a wholly-owned subsidiary of SNR HoldCo, which is an entity owned by SNR Management and us. Under the applicable accounting guidance in ASC 810, SNR HoldCo is considered a VIE and, based on the characteristics of the structure of this entity and in accordance with the applicable accounting guidance, we consolidate SNR HoldCo into our financial statements. The SNR Operative Agreements, as amended, provide for, among other things, that SNR Management has the ability, but not the obligation, to require SNR HoldCo to purchase SNR Management’s ownership interests in SNR HoldCo (the “SNR Put Right”) for a purchase price that equals its equity contribution to SNR HoldCo plus a fixed annual rate of return.

The First SNR Put Window closed in the first quarter of 2021. On November 15, 2021, we, through our wholly-owned subsidiary American III received notice that SNR Management exercised the SNR Put Right effective as of November 15, 2021. As of December 31, 2023 and December 31, 2022, the aggregate value of the SNR Put Right had accrued to approximately $438 million and $368 million, respectively. Subsequent to December 31, 2023, the FCC consented to the sale of SNR Management's ownership interests in SNR HoldCo, which was purchased by our direct wholly-owned subsidiary EchoStar SNR HoldCo LLC for a total of approximately $442 million on February 16, 2024. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to SNR HoldCo as of the purchase date and we continue to consolidate the SNR Entities as wholly-owned subsidiaries.

SNR HoldCo does not have a call right with respect to SNR Management's ownership interests in SNR HoldCo. Although SNR Management is the sole manager of SNR HoldCo, SNR Management's ownership interest is considered temporary equity under the applicable accounting guidance and is thus recorded as part of "Redeemable noncontrolling interests" in the mezzanine section of our Consolidated Balance Sheets. SNR Management's ownership interest in SNR HoldCo was initially accounted for at fair value. Subsequently, SNR Management's ownership interest in SNR HoldCo is increased by the fixed annual rate of return through "Redeemable noncontrolling interests" on our Consolidated Balance Sheets, with the offset recorded in "Net income (loss) attributable to noncontrolling interests, net of tax" on our Consolidated Statements of Operations and Comprehensive Income (Loss). The operating results of SNR HoldCo attributable to SNR Management are recorded as "Redeemable noncontrolling interests" on our Consolidated Balance Sheets, with the offset recorded in "Net income (loss) attributable to noncontrolling interests, net of tax" on our Consolidated Statements of Operations and Comprehensive Income (Loss). See Note 15 for further information.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires us to make certain estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expense for each reporting period. Estimates are based on historical experience, observable market inputs, and other reasonable assumptions in accounting for, among other things, allowances for credit losses (including those related to our installment billing programs), self-insurance obligations, deferred taxes and related valuation allowances, uncertain tax positions, loss contingencies, fair value of financial instruments, fair value of options granted under our stock-based compensation plans, fair value of assets and liabilities acquired in business combinations, the fair value of our option to purchase T-Mobile's 800 MHz spectrum, inputs used to recognize revenue over time, including the relative standalone selling prices of performance obligations, finance leases, asset impairments, estimates of future cash flows used to evaluate and recognize impairments, useful lives of property, equipment and intangible assets, incremental borrowing rate ("IBR") on lease right of use assets, nonrefundable upfront fees, independent third-party retailer incentives, programming expenses and subscriber lives. Economic conditions may increase the inherent uncertainty in the estimates and assumptions indicated above. Actual results may differ from previously estimated amounts, and such differences may be material to our consolidated financial statements. Estimates and assumptions are reviewed periodically, and the effects of revisions are reflected prospectively in the period they occur.

Cash and Cash Equivalents

We consider all liquid investments purchased with a remaining maturity of 90 days or less at the date of acquisition to be cash equivalents. Cash equivalents as of December 31, 2023 and 2022 may consist of money market funds, government bonds, corporate notes and commercial paper. The amortized cost of these investments approximates their fair value.

Concentration of Credit Risk

Cash and cash equivalents are maintained with several financial institutions domestically and internationally. Deposits held with banks may exceed the amount of insurance provided on such deposits. Generally, these deposits may be redeemed upon demand and are maintained with financial institutions with investment-grade credit ratings. We routinely assess the financial strength of significant customers, and this assessment, combined with the large number and geographical diversity of its customers, limits our concentration of risk with respect to receivables from contracts with customers.

Marketable Investment Securities

All equity securities are carried at fair value, with changes in fair value recognized in “Other, net” within “Other Income (Expense)” on our Consolidated Statements of Operations and Comprehensive Income (Loss).

All debt securities are classified as available-for-sale and are recorded at fair value. We report the temporary unrealized gains and losses related to changes in market conditions of marketable debt securities as a separate component of “Accumulated other comprehensive income (loss)” within “Stockholders’ Equity (Deficit),” net of related deferred income tax on our Consolidated Balance Sheets. The changes in the fair value of marketable debt securities, which are determined to be company specific credit losses are recorded in “Other, net” within “Other Income (Expense)” on our Consolidated Statements of Operations and Comprehensive Income (Loss). Interest income from available-for-sale debt securities is reported in Interest income, net in on our Consolidated Statements of Operations and Comprehensive Income (Loss).

We evaluate our debt investment portfolio to determine whether declines in the fair value of these securities are related to credit loss. Management estimates credit losses on marketable debt securities utilizing a credit loss impairment model on a quarterly basis. We estimate the expected credit losses, measured over the contractual life of marketable debt securities considering relevant issuer specific factors, including, but not limited to, a decrease in credit ratings or an entity’s ability to pay.

Receivables and Related Allowance for Credit Losses

General Accounts Receivable

Trade accounts receivable represent our unconditional rights to consideration arising from our performance under our customer contracts and are recorded at cost less an allowance for expected credit losses that are not expected to be recovered. We maintain allowances for credit losses resulting from the expected failure or inability of our customers to make required payments. We recognize the allowance for expected credit losses at inception and reassess quarterly based on management’s expectation of the asset’s collectability. Management estimates credit losses on financial assets, including our trade accounts receivable, utilizing a current expected credit loss impairment model. We estimate the expected credit losses, measured over the contractual life of an asset considering relevant historical loss information, credit quality of the customer base, current economic conditions and forecasts of future economic conditions.
In determining the allowance for credit losses, management groups similar types of financial assets with consistent risk characteristics. Pools identified by management include, but are not limited to residential customers, commercial customers, enterprise customers, and advertising services. The risk characteristics of the financial asset portfolios are monitored by management and reviewed periodically. The forecasts for future economic conditions are based on several factors including, but not limited to, changes in the unemployment rate, external economic forecasts and current collection rates. Our estimates of the allowance for credit losses may not be indicative of our actual credit losses requiring additional charges to be incurred to reflect the actual amount collected. Past due trade accounts receivable balances are written off against our allowance for credit losses when our internal collection efforts have been unsuccessful.

Installments Receivable

We offer Boost postpaid customers the option to pay for their devices and other equipment in installments, generally over a period of 36 months. Installments receivable are presented on our Consolidated Balance Sheets at their amortized cost basis (i.e., the receivables’ unpaid balance as adjusted for any written-off amounts due to impairment and unamortized discounts), net of the allowance for credit losses. At the time of an installment sale, we impute a discount for interest if the term exceeds 12 months as there is no stated rate of interest on the receivables. The receivables are recorded at their present value, which is determined by discounting expected future cash payments at the imputed interest rate. The current portion of installments receivable is included in “Trade accounts receivable, net” and the long-term portion of installments receivable is included in “Other noncurrent assets, net” on our Consolidated Balance Sheets. This adjustment results in a discount or reduction in the transaction price of the contract with a customer, which is allocated to the performance obligations of the arrangement such as Equipment and other revenues on our Consolidated Statements of Operations and Comprehensive Income (Loss).

The imputed discount rate reflects a current market interest rate and is predominately comprised of the estimated credit risk underlying the installment receivable, reflecting the estimated credit worthiness of the customer. The imputed discount on receivables is amortized over the financed installment term using the effective interest method and recognized in "Equipment and other revenues" on our Consolidated Statements of Comprehensive Income.

Inventory

Inventory is stated at the lower of cost or net realizable value. Cost is determined using the first-in, first-out method. The cost of manufactured inventory includes the cost of materials, labor, freight-in, royalties and manufacturing overhead. Net realizable value is calculated as the estimated selling price less reasonable costs necessary to complete, sell, transport and dispose of the inventory. We record write downs for inventory for obsolete and slow moving items based on trends and experience. We enter into arrangements with distributors where physical delivery of a product to a distributor has occurred, but we maintain control of the product until such time it is sold to an end consumer. For these arrangements, we account for the products as consigned inventory.

Property and Equipment

Property and equipment, including capitalized expenditures related to our wireless projects, 5G Network Deployment and satellites, are stated at cost less depreciation and impairment losses, if any. Capitalized expenditures include the cost of long-lived assets, plus the cost to construct the asset such as labor and overhead directly benefiting the asset. Interest is capitalized when pre-construction activity commences and ends once the asset is ready for its intended purpose. Our equipment leased to customers is generally capitalized when they are installed in customers' homes. We have certain assets acquired under finance leases. The recorded costs of those assets are the present values of all lease payments. We amortize our finance lease right of use ("ROU") assets over their respective lease terms.

If a satellite were to fail while in-orbit, the resultant loss would be charged to expense in the period such loss was incurred. The amount of any such loss would be reduced to the extent of insurance proceeds estimated to be received, if any. Depreciation is recorded on a straight-line basis over useful lives ranging from one to 40 years. Repair and maintenance costs are charged to expense when incurred. Renewals and improvements that add value or extend the asset's useful life are capitalized.

Internal Use Software

We capitalize certain costs related to developing or acquiring internal use software. Capitalization of software costs begin once the preliminary project stage is completed and we commit to funding the software project. Capitalizing ceases when the software project is ready for its intended use. Capitalized software costs are recorded in "Property and equipment, net" on our Consolidated Balance Sheets and are amortized over the estimated useful life of the software.

Asset Retirement Obligation

We record an asset retirement obligation for the estimated fair value of legal obligations associated with the retirement of tangible long-lived assets and a corresponding increase in the carrying amount of the related asset in the period in which the obligation is incurred. In periods subsequent to initial measurement, we recognize changes in the liability resulting from the passage of time and revisions to either the timing or the amount of the original estimate. Over time, the liability is accreted to its present value and the capitalized cost is depreciated over the estimated useful life of the asset. Our asset retirement obligations relate primarily to certain legal obligations to remediate leased property on our communication towers and are recorded in "Property and equipment, net" with the related liability recorded in "Long-term deferred revenue and other long-term liabilities" on our Consolidated Balance Sheets.

Other Investments

Equity Method Investments

We use the equity method to account for investments when we have the ability to exercise significant influence on the operating decisions of the affiliate. Such investments are initially recorded at cost and subsequently adjusted for our proportionate share of the net earnings or loss of the investee, which is reported in “Other, net” on our Consolidated Statements of Operations and Comprehensive Income (Loss). The carrying amount of such investments includes a component of goodwill when the cost of our investment exceeds the fair value of the underlying identifiable assets and liabilities of the affiliate. Dividends received from these affiliates reduces the carrying amount of our investment.

Cost Method Investments

We generally measure investments in non-publicly traded equity instruments without a readily determinable fair value at cost adjusted for observable price changes in orderly transactions for the identical or similar securities of the same issuer and changes resulting from impairments, if any. Other equity instruments are measured to determine their value based on observable market information. When we adjust the carrying amount of an investment to its estimated fair value, the gain or loss is recorded in “Other, net” on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Other Debt Investments

We generally record our investments in non-publicly traded debt instruments without a readily determinable fair value at amortized cost. We recognize any discounts over the term of the loan in “Interest income, net” in the Consolidated Statements of Operations and Comprehensive Income (Loss). In addition, some of our debt instruments have interest income that is paid-in-kind, which is added to the principal balance to determine the then current interest income. When we adjust the carrying amount of an investment, the gain or loss is recorded in “Other, net” on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Impairment Considerations

We periodically evaluate all of our other investments to determine whether events or changes in circumstances have occurred that may have a significant adverse effect on the fair value of the investment. We consider information if provided to us by our investees such as current financial statements, business plans, investment documentation, capitalization tables, liquidation waterfalls, and board materials; and we may make additional inquiries of investee management.

Indicators of impairment may include, but are not limited to, unprofitable operations, material loss contingencies, changes in business strategy, changes in market trends or market conditions, changes in the investees’ enterprise value and changes in the investees’ investment pricing. When we determine that one of our other investments is impaired we reduce its carrying value to its estimated fair value and recognize the impairment loss in “Other, net” on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Derivative Instruments

We may purchase and hold derivative financial instruments for, among other reasons, strategic or speculative purposes. We record all derivative financial instruments on our Consolidated Balance Sheets at fair value as either assets or liabilities. Changes in the fair values of derivative financial instruments are recognized in our results of operations and included in “Other, net” within “Other Income (Expense)” on our Consolidated Statements of Operations and Comprehensive Income (Loss). We have not designated any derivative financial instrument for hedge accounting.

We have the option to purchase certain of T-Mobile's 800 MHz spectrum licenses from T-Mobile at a fixed price in the future as part of the Boost Mobile Acquisition. See Note 6 for further information.

Impairment of Long-Lived Assets and Finite-Lived Intangible Assets

We review our long-lived assets and identifiable finite-lived intangible assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Intangible assets that have finite lives are amortized over their estimated useful lives. For assets which are held and used in operations, the asset would be impaired if the carrying amount of the asset (or asset group) exceeded its undiscounted future net cash flows. When an impairment is determined, the actual impairment recognized is the difference between the carrying amount and the fair value as estimated using one of the following approaches: income, cost and/or market. In the event of an impairment, a loss is recorded in "Impairment of long-lived assets" on our Consolidated Statements of Operations and Comprehensive Income (Loss) based on the amount by which the carrying amount exceeds the fair value of the long-lived asset or asset group. Assets which are to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell.

Fair value, using the income approach, is determined primarily using a discounted cash flow model that uses the estimated cash flows associated with the asset or asset group under review, discounted at a rate commensurate with the risk involved. Fair value, utilizing the cost approach, is determined based on the replacement cost of the asset reduced for, among other things, depreciation and obsolescence. Fair value, utilizing the market approach, benchmarks the fair value against the carrying amount.

DBS Satellites

We currently evaluate our DBS satellite fleet for impairment as one asset group whenever events or changes in circumstances indicate that its carrying amount may not be recoverable. We do not believe any triggering event has occurred which would indicate impairment as of December 31, 2023 and 2022. We will continue to monitor the DBS satellite fleet for indicators of impairment.

Broadband Satellites

We evaluate our Broadband satellites for impairment and test for recoverability whenever events or changes in circumstances indicate that their carrying value may not be recoverable. Certain anomalies may be considered a significant adverse change in the physical condition of a particular satellite. However, based on redundancies designed within each satellite, certain of these anomalies may not be considered to be significant events requiring a test of recoverability. We do not believe any triggering event has occurred which would indicate impairment as of December 31, 2023 and 2022. We will continue to monitor the Broadband satellite fleet for indicators of impairment.

Finite-Lived Regulatory Authorizations

We have regulatory authorizations that are not related to the FCC and have determined that they have finite lives due to uncertainties about the ability to extend or renew their terms. Finite lived regulatory authorizations are amortized over their estimated useful lives on a straight-line basis. Renewal costs are usually capitalized when they are incurred.

Finite-Lived Intangible Assets

Intangible assets include customer relationships, trademarks, and certain below market contracts. These assets are amortized over their respective useful lives. We do not believe any triggering event has occurred which would indicate impairment as of December 31, 2023 and 2022.

Indefinite-Lived Intangible Assets and Goodwill

We do not amortize indefinite-lived intangible assets and goodwill but test these assets for impairment annually, during the fourth quarter or more often if indicators of impairment arise. We have the option to first perform a qualitative assessment to determine whether it is necessary to perform a quantitative impairment test. However, we may elect to bypass the qualitative assessment in any period and proceed directly to performing the quantitative impairment test. Our intangible assets with indefinite lives primarily consist of FCC licenses and certain other contractual or regulatory rights to use spectrum at specified orbital locations. Generally, we have determined that our FCC licenses have indefinite useful lives due to the following:

- FCC licenses are a non-depleting asset;
- existing FCC licenses are integral to our business segments and will contribute to cash flows indefinitely;
- replacement satellite applications are generally authorized by the FCC subject to certain conditions, without substantial cost under a stable regulatory, legislative and legal environment;
- maintenance expenditures to obtain future cash flows are not significant;
- FCC licenses are not technologically dependent; and
- we intend to use these assets indefinitely.

DBS Licenses

We combine all of our indefinite-lived DBS licenses that we currently utilize or plan to utilize in the future into a single unit of accounting. For 2023, 2022 and 2021, management performed a qualitative assessment to determine whether it is more likely than not that the fair value of the DBS licenses exceeds the carrying amount. In our assessment, we considered several factors, including, among others, overall financial performance, industry and market considerations, and relevant company specific events. In contemplating all factors in their totality, we concluded that it is more likely than not that the fair value of the DBS licenses exceeds its carrying amount. As such, no further analysis was required.

Broadband Licenses

Through a business acquisition in 2011, we acquired regulatory authorizations from the FCC to operate satellites using Ka-band frequencies at the 95° W.L. and 107.1° W.L. orbital locations (“Operational FCC Slot Licenses”). The regulatory rights for each orbital location are substantially equivalent. Through a business acquisition in 2019, we acquired global S-band non-geostationary satellite spectrum rights for mobile satellite services (the “Helios Spectrum”). For the year ended December 31, 2023, 2022 and 2021, management performed a qualitative assessment to determine whether it was more likely than not that the fair value of these licenses exceeds the carrying amount. In our assessment, we considered several factors, including, among others, overall financial performance, industry and market considerations, and relevant company specific events. In contemplating all factors in their totality, we concluded that it is more likely than not that the fair value of the Operational FCC Slot Licenses and the Helios Spectrum exceed their carrying amounts. As such, no further analysis was required.

Wireless Spectrum Licenses

During 2022, we acquired the 3.45-3.55 GHz wireless licenses (the “3.45–3.55 GHz Licenses”). During 2021, we acquired the 3550-3650 MHz (CBRS) and 3.7-3.98 GHz wireless licenses, together (the “C-Band Licenses”). During 2020, we acquired the 37 GHz, 39 GHz, and 47 GHz wireless licenses and during 2019, we acquired the 24 GHz and 28 GHz wireless licenses, together (the “High-Band Licenses”).

In 2023 and 2022, we combined our 600 MHz, 700 MHz, AWS-4, H Block, High-Band Licenses, C-Band Licenses, 3.45–3.55 GHz Licenses and the Northstar Licenses and SNR Licenses into a single unit of accounting. In 2021, we combined our 600 MHz, 700 MHz, AWS-4, H Block, High-Band Licenses, C-Band Licenses, 3.45–3.55 GHz Licenses and the Northstar Licenses and SNR Licenses into a single unit of accounting.

In 2023, we quantitatively assessed these licenses for impairment. Our quantitative assessment consisted of a market approach performed by a third party and reviewed by management.

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Market Approach. Currently frequencies in the 500 kHz to 30 GHz make up the bulk of commercial use in the United States. Spectrum bands can be grouped into four categories: low-band (less than 1 GHz), lower mid-band (1-2 GHz), upper mid-band (primarily 2-4 GHz) and high-band (generally above 24 GHz). Radio frequencies have different characteristics with regard to the distance they will travel and their ability to penetrate structures. Lower band frequency bands require less power to travel large distances and propagate well providing geographic coverage, whereas higher bandwidth spectrum is favored in urban settings where the goal is increased data capacity and cell sites are dense, with limited coverage areas.

Spectrum is licensed by geographic areas that can vary from the size of a county to significantly larger expanses. Licenses can cover densely populated urban areas to sparsely populated rural regions. Pricing for spectrum licenses will vary, sometimes significantly based on the frequency, population area or restrictions associated with the authorization for use obtained from the FCC. Population or “Pop” is a key input to valuing each geographic license. The amount of spectrum included in a license is measured in terms of megahertz, referred to as “MHz.” The wider the band the greater the MHz.

The market approach assessed the value of our spectrum using benchmarks, based on market transactions, which may include spectrum auctions and secondary market transactions, either acquisitions of spectrum or of businesses for which spectrum values can reliably be inferred. The market approach looked at the value of each band of our spectrum by block and geographic area based on pairing the spectrum in a manner that yielded its highest and best use. Prices were then calculated on an amount per MHz-Pop basis (where the numerator is the total value of the licenses and the denominator is the product of the population and MHz) based upon the most relevant data points. Finally, a discount was applied to the analysis for lack of marketability on certain of our holdings based on sale restrictions associated with those specific bands.

Our spectrum holdings include low-band, lower mid-band, upper mid-band (collectively referred to as “Low-Mid Band Licenses”) and high-band licenses.

As part of our impairment assessment we performed the market approach during the fourth quarter of 2023 and concluded that the fair value of these licenses are substantially in excess of their carrying value.

In 2022, management performed a quantitative assessment to determine whether the fair value of these licenses exceed the carrying amount. In our assessment, we performed the market approach and the income approach during the fourth quarter of 2022 and concluded that under both scenarios the fair value of these licenses are substantially in excess of their carrying value.

In 2021, management performed a qualitative assessment to determine whether it is more likely than not that the fair value of these licenses exceed the carrying amount. In our assessment, we considered several factors, including, among other things, the projected financial performance of our Wireless segment, the business enterprise value of our Wireless segment, and market transactions for wireless spectrum licenses including auction results. In assessing these factors, we considered both macroeconomic conditions and industry and market conditions. In contemplating all factors in their totality, we concluded that it is more likely than not that the fair value of these licenses exceeds their carrying amount.

During 2023, 2022, and 2021, our multichannel video distribution and data service (“MVDDS”) wireless spectrum licenses were assessed as a single unit of accounting. For 2023, 2022 and 2021, management assessed these licenses qualitatively. Our qualitative assessment focused on recent auction results and historical market activity. We concluded that it is more likely than not that the fair value of these licenses exceeded their carrying amount.

Changes in circumstances or market conditions could result in a write-down of any of the above Wireless spectrum licenses in the future.

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Goodwill

Goodwill represents the excess of the consideration transferred over the estimated fair values of assets acquired and liabilities assumed as of the acquisition date. We test goodwill for impairment at the reporting unit level, which includes, among others, the SLING TV, DISH TV, Retail Wireless, 5G Network Deployment and Hughes reporting units. Historically the majority of our goodwill relates to the Hughes reporting unit within our Broadband and Satellite Services segment and the Retail Wireless and 5G Network Deployment segments.

We perform our annual impairment assessment for goodwill and other indefinite-lived intangible assets each year during the fourth quarter or more frequently if events or changes in circumstances indicate an impairment may be possible. We previously performed our annual impairment assessment for goodwill during the second quarter and changed the testing date due to the Merger in order to align the testing date between all reporting units. The change in testing date does not result in a material change in the method of our goodwill impairment assessment. We may consider qualitative factors to assess if it is more likely than not that the fair value for goodwill is below the carrying amount. If we determine in the qualitative assessment that it is more likely than not that the fair value is less than its carrying value, then we perform a quantitative assessment to determine the estimated fair value of the reporting unit. We may also elect to bypass the qualitative assessment and perform a quantitative assessment.

Our assessment process included, among other things, discounted cash flow analyses, consideration of fair values of tangible and indefinite-lived intangible assets held by the reporting units and our recent market capitalization. Our assessment indicated the goodwill attributed to certain acquisitions was no longer supported based on the sustained decrease in our market capitalization. As such, we recorded a total noncash impairment charge of approximately $758 million in "Impairment of long-lived assets and goodwill" on our Consolidated Statements of Operations and Comprehensive Income (Loss).

No impairments were indicated for any reporting unit for the years ended December 31, 2022 and 2021.

The following table presents the changes in the carrying amounts of goodwill by operating segment:

Goodwill	**Pay-TV**	**Retail Wireless**	**5G Network Deployment**	**Broadband and Satellite Services**	**Total**
			(In thousands)		
Balance as of December 31, 2021, net of accumulated impairment losses	$ 6,457	$ 98,657	$ 119,903	$ 511,086	$ 736,103
Goodwill from India JV formation, net of foreign currency translation	—	—	—	21,405	21,405
Balance as of December 31, 2022, net of accumulated impairment losses	$ 6,457	$ 98,657	$ 119,903	$ 532,491	$ 757,508
Impairment of goodwill	(6,457)	(98,657)	(119,903)	(532,491)	(757,508)
Balance as of December 31, 2023, net of accumulated impairment losses	$ —	$ —	$ —	$ —	$ —
Accumulated impairment losses as of December 31, 2023	$ (6,457)	$ (98,657)	$ (119,903)	$ (532,491)	$ (757,508)

Capitalized Interest

We capitalize interest associated with the acquisition or construction of certain assets, including, among other things, our Wireless spectrum licenses, build-out costs associated with our 5G Network Deployment and satellites. Capitalization of interest begins when, among other things, steps are taken to prepare the asset for its intended use and ceases when the asset is ready for its intended use or when these activities are substantially suspended.

We are currently commercializing our 5G Network Deployment. As a result, the interest expense related to the carrying amount of the 5G Network Deployment qualifying assets is being capitalized. Historically, the qualifying assets exceeded the carrying value of our long-term debt and finance lease obligations, therefore substantially all of our interest expense was being capitalized. However, as the qualifying assets, including certain bands of wireless spectrum licenses, are placed into service, we will no longer capitalize interest on those assets and we will begin to expense interest on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Business Combinations

When we acquire a business that is not subject to rules pertaining to common control, we allocate the purchase price to the various components of the acquisition based upon the fair value of each component using various valuation techniques, including the market approach, income approach and/or cost approach. The accounting standard for business combinations requires identifiable assets, liabilities, noncontrolling interests and goodwill acquired to be recorded at acquisition date fair values. Transaction costs related to the acquisition of the business are expensed as incurred. Costs associated with the issuance of debt associated with a business combination are capitalized and included as a yield adjustment to the underlying debt's stated rate.

Acquired intangible assets other than goodwill are amortized over their estimated useful lives unless the lives are determined to be indefinite. Amortization of these intangible assets in general are recognized on a straight-line basis over an average finite useful life primarily ranging from approximately one to 20 years or in relation to the estimated discounted cash flows over the life of the intangible asset.

Long-Term Deferred Revenue and Other Long-Term Liabilities

Certain programmers provide us up-front payments. Such amounts are deferred and recognized as reductions to "Cost of services" on a straight-line basis over the relevant remaining contract term (generally up to ten years). The current and long-term portions of these deferred credits are recorded on our Consolidated Balance Sheets in "Deferred revenue and other" and "Long-term deferred revenue and other long-term liabilities," respectively.

Sales Taxes

We account for sales taxes imposed on our goods and services on a net basis on our Consolidated Statements of Operations and Comprehensive Income (Loss). Since we primarily act as an agent for the governmental authorities, the amount charged to the customer is collected and remitted directly to the appropriate jurisdictional entity.

Income Taxes

We establish a provision for income taxes currently payable or receivable and for income tax amounts deferred to future periods. Deferred tax assets and liabilities are recorded for the estimated future tax effects of differences that exist between the book and tax basis of assets and liabilities. Deferred tax assets are offset by valuation allowances when we believe it is more likely than not that such net deferred tax assets will not be realized.

From time to time, we engage in transactions where the tax consequences may be subject to uncertainty. We record a liability when, in management's judgment, a tax filing position does not meet the more likely than not threshold. For tax positions that meet the more likely than not threshold, we may record a liability depending on management's assessment of how the tax position will ultimately be settled. We adjust our estimates periodically for ongoing examinations by and settlements with various taxing authorities, as well as changes in tax laws, regulations and precedent. We classify interest and penalties, if any, associated with our uncertain tax positions as a component of "Interest expense, net of amounts capitalized" and "Other, net," respectively, on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Fair Value Measurements

We determine fair value based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. Market or observable inputs are the preferred source of values, followed by unobservable inputs or assumptions based on hypothetical transactions in the absence of market inputs. We apply the following hierarchy in determining fair value:

- Level 1, defined as observable inputs being quoted prices in active markets for identical assets;
- Level 2, defined as observable inputs other than quoted prices included in Level 1, including quoted prices for similar assets and liabilities in active markets; and quoted prices for identical or similar instruments in markets that are not active and model-derived valuations in which significant inputs and significant value drivers are observable in active markets; and
- Level 3, defined as unobservable inputs for which little or no market data exists, consistent with reasonably available assumptions made by other participants therefore requiring assumptions based on the best information available.

As of December 31, 2023 and 2022, the carrying amount for cash and cash equivalents, trade accounts receivable (net of allowance for credit losses) and current liabilities (excluding the “Current portion of long-term debt and finance lease obligations”) was equal to or approximated fair value due to their short-term nature or proximity to current market rates.

Fair values of our marketable investment securities are measured on a recurring basis based on a variety of observable market inputs. For our investments in publicly traded equity securities and U.S. government securities, fair value ordinarily is determined based on Level 1 measurements that reflect quoted prices for identical securities in active markets. Fair values of our investments in other marketable debt securities are generally based on Level 2 measurements as the markets for such debt securities are less active. We consider trades of identical debt securities on or near the measurement date as a strong indication of fair value and matrix pricing techniques that consider par value, coupon rate, credit quality, maturity and other relevant features may also be used to determine fair value of our investments in marketable debt securities. Additionally, we use fair value measurements from time to time in connection with other investments, asset impairment testing and the assignment of purchase consideration to assets and liabilities of acquired companies. Those fair value measurements typically include significant unobservable inputs and are categorized within Level 3 of the fair value hierarchy.

Transfers between levels in the fair value hierarchy are considered to occur at the beginning of the quarterly accounting period. There were no transfers between levels during the years ended December 31, 2023 and 2022. See Note 6 for the fair value of our marketable investment securities and derivative instruments.

Fair values for our publicly traded debt securities are based on quoted market prices, when available. The fair values of private debt are based on, among other things, available trade information, and/or an analysis in which we evaluate market conditions, related securities, various public and private offerings, and other publicly available information. In performing this analysis, we make various assumptions regarding, among other things, credit spreads, and the impact of these factors on the value of the debt securities. See Note 10 for the fair value of our long-term debt.

Convertible Long-Term Debt

Historically, for embedded conversion features, we valued and bifurcated the conversion option associated with convertible notes (the "equity component") from the host debt instrument. The initial value of the equity component on the convertible notes was recorded in "Additional paid-in capital" within "Stockholders' Equity (Deficit)" on our Consolidated Balance Sheets with the offset recorded as the debt discount. In accordance with ASU 2020-06 *Debt – Debt with Conversion and Other Options and Derivatives and Hedging – Contracts in Entity's Own Equity* ("ASU 2020-06"), which we adopted during the first quarter of 2021, the equity component related to our convertible notes of $1.051 billion has been reclassified from "Additional paid-in capital" within "Stockholders' Equity (Deficit)" to "Long-term debt and finance lease obligations, net of current portion" and the associated deferred taxes of $246 million has been reclassified from "Additional paid-in capital" within "Stockholders' Equity (Deficit)" to "Deferred tax liabilities" on our Consolidated Balance Sheets.

Deferred Debt Issuance Costs and Debt Discounts

Costs of issuing debt, including premiums and discounts relative to par value, are generally deferred and amortized to "Interest expense, net of amounts capitalized" on our Consolidated Statements of Operations and Comprehensive Income (Loss) using the effective interest rate method over the terms of the respective notes. We report unamortized debt issuance costs as a reduction of the related long-term debt on our Consolidated Balance Sheets. See Note 10 for further information.

Revenue Recognition

Pay-TV Segment

Our Pay-TV segment revenue is primarily derived from Pay-TV subscriber revenue. We also generate revenue from equipment rental fees and other hardware related fees, including DVRs and fees from subscribers with multiple receivers; advertising services; fees earned from our in-home service operations; broadband services; warranty services; sales of digital receivers and related equipment to third-party pay-TV providers; satellite uplink and telemetry, tracking and control ("TT&C") services; and revenue from in-home services. See Note 16 for further information, including revenue disaggregated by major source.

Our residential video subscribers contract for individual services or combinations of services, as discussed above, the majority of which are generally distinct and are accounted for as separate performance obligations. We consider our installations for first time DISH TV subscribers to be a service. However, since we provide a significant integration service combining the installation with programming services, we have concluded that the installation is not distinct from programming and thus the installation and programming services are accounted for as a single performance obligation. We generally satisfy these performance obligations and recognize revenue as the services are provided, for example as the programming is broadcast to subscribers, as this best represents the transfer of control of the services to the subscriber.

In cases where a subscriber is charged certain nonrefundable upfront fees, those fees are generally considered to be material rights to the subscriber related to the subscriber's option to renew without having to pay an additional fee upon renewal. These fees are deferred and recognized over the estimated period of time during which the fee remains material to the customer, which we estimate to be less than one year. Revenues arising from our in-home services that are separate from the initial installation, such as mounting a TV on a subscriber's wall, are generally recognized when these services are performed.

For our residential video subscribers, we have concluded that the contract term under Accounting Standard Codification Topic 606, *Revenue from Contracts with Customers* ("ASC 606") is one month and as a result the revenue recognized for these subscribers for a given month is equal to the amount billed in that month, except for certain nonrefundable upfront fees that are accounted for as material rights, as discussed above.

Revenues from our advertising services are typically recognized as the advertisements are broadcast. Sales of equipment to subscribers or other third parties are recognized when control is transferred under the contract. Revenue from our commercial video subscribers typically follows the residential model described above, with the exception that the contract term for most of our commercial subscribers exceeds one month and can be multiple years in length. However, commercial subscribers typically do not receive time-limited discounts or free service periods and accordingly, while they may have multiple performance obligations, revenue is equal to the amount billed in a given month.

Retail Wireless Segment

Our Retail Wireless segment revenue is primarily derived from Wireless subscriber revenue and selling wireless devices to prepaid and postpaid subscribers. The majority of our subscribers are prepaid under the Boost Mobile and Gen Mobile brands with a smaller subset of postpaid subscribers serviced under Boost postpaid brand. Prepaid subscribers prepay for their monthly service on a month-to-month contract. Our contracts with prepaid customers are determined to be one month. Postpaid subscribers are qualified to pay for their service after it has been provided and pay for their monthly service on a month-to-month contract. Our contracts with postpaid customers typically have an enforceable duration of one month. However, promotional bill credits offered to a customer on an equipment sale that are paid over time and are contingent on the customer maintaining a service contract may result in an extended service contract based on whether a substantive penalty is deemed to exist.

We have both an indirect sales channel, which includes third-party owned retail stores and big box stores, as well as online through Amazon, and a direct sales channel, which services customers online through each respective brand's website. To deliver products to third-party retail stores through the indirect sales channel, we use direct distribution partners to facilitate product delivery. Our contracts with customers may involve more than one performance obligation, which include wireless services, wireless devices or a combination thereof, and we allocate the transaction price between each performance obligation based on its relative standalone selling price. Although our Retail Wireless segment offers both products and services, we have determined that not all contracts with customers are bundled arrangements as the wireless device and service are sometimes sold at different times, and in the case of certain sales arrangements through the indirect sales channel, have different customers. When control of the product is transferred to an intermediary other than the end customer in the indirect channel, the customer for the wireless device is the intermediary, such as the direct distribution partner, whereas for the service the subscriber is the end consumer. When control of the product is not transferred to the intermediary, in the indirect channel the product is accounted for as consigned inventory and the customer for both the wireless device and service is the end customer. Service revenues may also include other value added services to subscribers, which may be recorded either gross or net within our Consolidated Statements of Operations and Comprehensive Income (Loss) depending on whether we are deemed to be the principal or agent in the relationship with the subscriber. Service revenues are recognized when the service has been provided and no further obligation exists. Concessions given to subscribers are recorded as a reduction to revenue.

Equipment revenues are primarily related to the sale of wireless devices. Equipment revenue is recognized when control of the product is transferred to our customer, either the direct distribution partner or the end customer, as described above. We offer postpaid customers the option to pay for devices in installments, generally over 36 months. We recognize the effects of a financing component as a reduction of the transaction price in contracts where customers purchase their devices with an installment term of more than one year, including those financing components that are not considered to be significant to the contract.

We have elected the practical expedient of not recognizing the effects of a significant financing component for contracts where we expect, at contract inception, that the period between the transfer of a performance obligation to a customer and the customer's payment for that performance obligation will be one year or less. We may offer certain promotions that provide our customers on device installment plans with the right to upgrade to a new device after paying a specified portion of their device payment plan agreement amount and trading in their device in good working order. We account for this trade-in right as a guarantee obligation. The full amount of the trade-in right's fair value is recognized as a guarantee liability and results in a reduction to the revenue recognized upon the sale of the device. The total transaction price is reduced by the guarantee, which is accounted for outside the scope of Topic 606, and the remaining transaction price is allocated between the performance obligations within the contract. Sales of equipment in the indirect sales channel often include credits subsequently paid to the direct distribution partner as a reimbursement for any discount promotions offered to the end consumer.

These credits (payments to a customer) are accounted for as variable consideration when estimating the amount of revenue to recognize from the sales of equipment to indirect dealers and are estimated based on historical experience and other factors, such as expected promotional activity. For wireless devices sold with a right of return, we defer a portion of equipment revenue and cost of sales to reflect this variable consideration.

Broadband and Satellite Services Segment

Our broadband service contracts typically obligate us to provide substantially the same services on a recurring basis in exchange for fixed recurring fees over the term of the contract. We satisfy such performance obligations over time and recognize revenue ratably as services are rendered over the service period. Certain of our contracts with service obligations provide for fees based on usage, capacity or volume. We satisfy these performance obligations and recognize the related revenue at the point in time, or over the period, when the services are rendered. Our Broadband and Satellite Services segment also sells and leases communications equipment to its customers. Revenue from equipment sales generally is recognized based upon shipment terms. Our equipment sales contracts typically include standard product warranties, but generally do not provide for returns or refunds. Revenue for extended warranties is recognized ratably over the extended warranty period. For contracts with multiple performance obligations, we typically allocate the contract's transaction price to each performance obligation based on their relative standalone selling prices. When the standalone selling price is not observable, our primary method used to estimate standalone selling price is the expected cost plus a margin. Our contracts generally require customer payments to be made at or shortly after the time we transfer control of goods or perform the services.

In addition to equipment and service offerings, our Broadband and Satellite Services segment also enters into long-term contracts to design, develop, construct and install complex telecommunication networks for mobile system operators and enterprise customers. Revenue from such contracts is generally recognized over time as a measure of progress that depicts the transfer of control of the goods or services to the customer. Depending on the nature of the arrangement, we measure progress toward contract completion using an appropriate input method or output method. Under the input method, we recognize the transaction price as revenue based on the ratio of costs incurred to estimated total costs at completion. Under the output method, revenue and cost of sales are recognized as products are delivered based on the expected profit for the entire agreement. Profit margins on long-term contracts generally are based on estimates of revenue and costs at completion. We review and revise our estimates periodically and recognize related adjustments in the period in which the revisions are made. Estimated losses on contracts are recorded in the period in which they are identified. We generally receive interim payments as work progresses, although for some contracts, we may be entitled to receive an advance payment.

We derive a portion of our revenues from contracts with customers for connectivity services. These contracts typically require advance or recurring monthly payments by the customer. Our obligation to provide connectivity services is satisfied over time as the customer simultaneously receives and consumes the benefits provided. The measure of progress over time is generally based upon usage.

Generally, our satellite service contracts with customers contain a single performance obligation and, therefore, there is no need to allocate the transaction price. We transfer control and recognize revenue for satellite services at the point in time or over the period when the services are rendered.

Governmental Funding

We participate in various United States federal and state programs, including the Affordable Connectivity Program ("ACP") under which eligible low-income households may receive a discount off the cost of broadband service and certain connected devices, and participating providers can receive a reimbursement for such discounts. This revenue is included in "Service and other revenue" on our Consolidated Statements of Operations and Comprehensive Income (Loss). Corresponding receivables are recorded when services have been provided to the customers and costs incurred, but cash has not been received. These amounts are included in "Trade accounts receivable, net" on our Consolidated Balance Sheets.

Contract Balances

The timing of revenue recognition generally differs from the timing of invoicing to customers. A contract asset is recorded when revenue is recognized in advance of our right to receive consideration (i.e., we must perform additional services in order to receive consideration). Amounts are recorded as trade accounts receivable when our right to consideration is unconditional. When consideration is received, or we have an unconditional right to consideration in advance of delivery of goods or services, a contract liability is recorded. The transaction price can include nonrefundable upfront fees, which are allocated to the identifiable performance obligations. Our residential video subscribers are typically billed monthly, and the contract balances for those customers arise from the timing of the monthly billing cycle. Our current Wireless subscribers, the majority of which are prepaid, generate deferred revenue. We do not adjust the amount of consideration for financing impacts when we anticipate that the period between transfer of goods and services and eventual payment for those goods and services will be less than one year. Contract assets are included in "Trade accounts receivable, net" and contract liabilities are included in "Deferred revenue and other" and "Long-term deferred revenue and other long-term liabilities" on our Consolidated Balance Sheets. Contract balances are amortized over the contract term. See Note 17 for further information, including balance and activity detail about our allowance for credit losses and deferred revenue related to contracts with subscribers.

Assets Recognized Related to the Costs to Obtain a Contract with a Customer

We recognize an asset for the incremental costs of obtaining a contract with a customer if we expect the benefit of those costs to be longer than one year. We have determined that certain sales incentive programs in our Pay-TV, Broadband and Satellite Services, and Retail Wireless segments, including those with our independent third-party retailers, meet the requirements to be capitalized, and payments made under these programs are capitalized and amortized to expense over the estimated customer life or the contract term. These amounts are capitalized in "Other current assets" and "Other noncurrent assets, net" on our Consolidated Balance Sheets, and then amortized in "Selling, general and administrative expenses" on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Leases

Lessee Accounting

We enter into non-cancelable operating and finance leases for, among other things, communication towers, satellites, satellite-related ground infrastructure, data centers, office space, dark fiber and transport equipment, warehouses and distribution centers, vehicles and other equipment. Substantially all of our leases have remaining lease terms from one to 13 years, some of which include renewal options, and some of which include options to terminate the leases within one year. For certain arrangements (generally communication towers), the lease term includes the non-cancelable period plus the renewal period that we are reasonably certain to exercise.

We determine if an arrangement is a lease and classify that lease as either an operating or finance lease at inception. Operating leases are included in "Operating lease assets," "Other accrued expenses" and "Operating lease liabilities" on our Consolidated Balance Sheets. Finance leases are included in "Property and equipment, net," "Current portion of long-term debt and finance lease obligations" and "Long-term debt and finance lease obligations, net of current portion" on our Consolidated Balance Sheets. Leases with an initial term of 12 months or less are not recorded on the balance sheet and we recognize lease expense for these leases on a straight-line basis over the lease term on our Consolidated Statements of Operations and Comprehensive Income (Loss). See Note 9 for further information on our lease expenses.

Right of use ("ROU") assets represent our right to use an underlying asset for the lease term and lease liabilities represent the present value of our obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. The operating lease ROU asset also includes the impact of prepaid or deferred lease payments. When our leases do not provide an implicit rate, we use our IBR based on the information available at commencement date in determining the present value of lease payments. Our IBR is based on an estimated secured rate for the same term as the underlying lease plus a credit spread as secured by our assets. For leases denominated in a currency different than U.S. dollar, IBR is estimated using the collateralized borrowing rate in the foreign currency using the U.S. dollar and foreign currency swap spread, when available. The length of our lease term may include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Lease expense for operating lease payments is recognized on a straight-line basis over the lease term.

We have lease agreements with lease and non-lease components, which are generally accounted for separately. Our variable lease payments are immaterial and our lease agreements do not contain any material residual value guarantees or material restrictive covenants.

Lessor Accounting

DISH TV subscribers have the choice of leasing or purchasing the satellite receiver and other equipment necessary to receive our DISH TV services. Most of our new DISH TV subscribers choose to lease equipment and thus we retain title to such equipment. Equipment leased to new and existing DISH TV subscribers is capitalized and depreciated over their estimated useful lives.

For equipment leased to new and existing DISH TV subscribers, we made an accounting policy election to combine the equipment with our programming services as a single performance obligation in accordance with the revenue recognition guidance as the programming services are the predominant component. The non-lease service revenue related to equipment leased to new and existing DISH TV subscribers would have otherwise been accounted for as an operating lease.

We lease satellite capacity, communications equipment and real estate to certain of our customers. We identify and determine the classification of such leases as operating leases or sales-type leases. A lease is classified as a sales-type lease if it meets the criteria for a finance lease; otherwise it is classified as an operating lease. Some of our leases are embedded in contracts with customers that include non-lease performance obligations. For such contracts, except where we have elected otherwise, we allocate consideration in the contract between lease and non-lease components based on their relative standalone selling prices. We elected an accounting policy to not separate the lease of equipment from related services in our HughesNet satellite internet service (the "HughesNet service") contracts with customers and account for all revenue from such contracts as non-lease service revenue. Assets subject to operating leases remain in "Property and equipment, net" and continue to be depreciated. Assets subject to sales-type leases are derecognized from "Property and equipment, net" at lease commencement and a net investment in the lease asset is recognized in "Trade accounts receivable, net" and "Other noncurrent assets, net" on our Consolidated Balance Sheets.

Operating lease revenue is generally recognized on a straight-line basis over the lease term. Sales-type lease revenue and a corresponding receivable generally are recognized at lease commencement based on the present value of the future lease payments and related interest income on the receivable is recognized over the lease term. Payments under sales-type leases are discounted using the interest rate implicit in the lease or our incremental borrowing rate if the interest rate implicit in the lease cannot be reasonably determined. We report revenue and periodic interest income from sales-type leases at the commencement date in "Equipment sales and other revenue" on our Consolidated Statements of Operations and Comprehensive Income (Loss). We report operating lease revenue in "Service and other revenue" on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Cost of Services

Pay-TV Segment

“Cost of services” on our Consolidated Statements of Operations and Comprehensive Income (Loss) principally includes programming expenses and other operating costs related to our Pay-TV segment. The cost of television programming distribution rights is generally incurred on a per subscriber basis and various upfront carriage payments are recognized when the related programming is distributed to subscribers. Long-term flat rate programming contracts are generally charged to expense using the straight-line method over the term of the agreement. The cost of television programming rights to distribute live sporting events for a season or tournament is charged to expense using the straight-line method over the course of the season or tournament.

Broadband and Satellite Services Segment

“Cost of services” on our Consolidated Statements of Operations and Comprehensive Income (Loss) principally consists of costs of satellite capacity and services, hub infrastructure, customer care, wireline and wireless capacity and direct labor costs associated with the services provided and is generally charged to expense as incurred.

Retail Wireless Segment

“Cost of services” on our Consolidated Statements of Operations and Comprehensive Income (Loss) principally includes and costs incurred under the MNSA and NSA. Costs incurred under the MNSA and NSA are recognized as the services are performed or as incurred.

Cost of Sales – Equipment and Other

Pay-TV Segment

“Cost of sales – equipment and other” on our Consolidated Statements of Operations and Comprehensive Income (Loss) principally includes costs related to the non-subsidized sales of Pay-TV equipment. Costs are generally recognized as products are delivered to customers and the related revenue is recognized.

Broadband and Satellite Services Segment

“Cost of sales – equipment and other” on our Consolidated Statements of Operations and Comprehensive Income (Loss) principally consists of inventory costs, including freight and royalties, and is generally recognized at the point in time control of the equipment is passed to the customer and related revenue is recognized.

Retail Wireless Segment

“Cost of sales – equipment and other” on our Consolidated Statements of Operations and Comprehensive Income (Loss) principally includes the cost of wireless devices and other related items, certain direct costs of wireless mobile network operations to deliver wireless voice and data services. Costs are generally recognized as products are delivered to customers and the related revenue is recognized.

5G Network Deployment Segment

“Cost of sales – equipment and other” on our Consolidated Statements of Operations and Comprehensive Income (Loss) principally includes the lease expense on communication towers and transport as well as cloud services. Lease costs are generally recognized on a straight-line basis over the lease term. Costs related to cloud services are either recognized ratably over the contract term or based on usage.

Advertising Costs

We recognize advertising expense when incurred as a component of “Selling, general and administrative expenses” on our Consolidated Statements of Operations and Comprehensive Income (Loss). Advertising expenses totaled $868 million, $816 million and $725 million for the years ended December 31, 2023, 2022 and 2021, respectively.

Research and Development

Research and development costs, not incurred in connection with customer requirements, are expensed as incurred and are included as a component of “Selling, general and administrative expenses” on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Additionally, customer-related research and development costs are incurred in connection with the specific requirements of a customer’s order; in such instances, the amounts for these customer funded development efforts are also included in “Cost of sales – equipment and other” on our Consolidated Statements of Operations and Comprehensive Income (Loss). Research and development costs totaled $110 million, $110 million and $91 million for the years ended December 31, 2023, 2022 and 2021, respectively.

Foreign Currency

The functional currency for certain of our foreign operations is determined to be the local currency. Accordingly, we translate assets and liabilities of these foreign entities from their local currencies to U.S. dollars using period-end exchange rates and translate income and expense accounts at monthly average rates. The resulting translation adjustments are reported in “Other, net” on our Consolidated Statements of Operations and Comprehensive Income (Loss). Except in certain uncommon circumstances, we have not recorded deferred income taxes related to our foreign currency translation adjustments.

Gains and losses resulting from the re-measurement of transactions denominated in foreign currencies are recognized in “Other, net” on our Consolidated Statements of Operations and Comprehensive Income (Loss).

New Accounting Pronouncements

Joint Ventures. On August 23, 2023, the FASB issued ASU 2023-05, *Business Combinations — Joint Venture Formations (Subtopic 805-60)* (“ASU 2023-05”), which requires an entity that qualifies as either a joint venture or a corporate joint venture as defined in the FASB Accounting Standards Codification (ASC) master glossary to apply a new basis of accounting upon the formation of the joint venture. This standard will be effective for all joint venture formations with a formation date on or after January 1, 2025. A joint venture that was formed before January 1, 2025 may elect to apply the amendments retrospectively if it has sufficient information. Early adoption is permitted in any interim or annual period in which financial statements have not yet been issued or made available for issuance. We are evaluating the impact the adoption of ASU 2023-05 will have on our Consolidated Financial Statements and related disclosures.

Segment Reporting. On November 27, 2023, the FASB issued ASU 2023-07 *Segment Reporting (Topic 280): Improvements to Reporting Segment Disclosures* (“ASU 2023-07”), which will enhance financial reporting by providing additional information about a public company’s significant segment expenses and more timely and detailed segment information reporting throughout the fiscal period. This standard will be effective for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024. Early adoption is permitted. We are evaluating the impact the adoption of ASU 2023-07 will have on our Consolidated Financial Statements and related disclosures.

Income Taxes. On December 14, 2023, the FASB issued ASU 2023-9, *Income Taxes (Topic 740)*: *Improvements to Income Tax Disclosures* (“ASU 2023-09”), which will enhance income tax disclosures. ASU 2023-09 requires among other items disaggregated information in a reporting entity’s rate reconciliation table, clarification on uncertain tax positions and the related financial statement impact as well as information on income taxes paid on a disaggregated basis. This standard will be effective for fiscal years beginning after December 15, 2024. Early adoption is permitted.

We are evaluating the impact the adoption of ASU 2023-09 will have on our Consolidated Financial Statements and related disclosures.

3. Basic and Diluted Net Income (Loss) Per Share

We present both basic earnings per share ("EPS") and diluted EPS. Basic EPS excludes potential dilution and is computed by dividing "Net income (loss) attributable to EchoStar" by the weighted-average number of common shares outstanding for the period. Diluted EPS reflects the potential dilution that could occur if stock awards were exercised and if our Convertible Notes were converted. The potential dilution from stock awards is accounted for using the treasury stock method based on the average market value of our Class A common stock for the reporting period. The potential dilution from conversion of the Convertible Notes is accounted for using the if-converted method, which requires that all of the shares of our Class A common stock issuable upon conversion of the Convertible Notes will be included in the calculation of diluted EPS assuming conversion of the Convertible Notes at the beginning of the reporting period (or at time of issuance, if later).

Merger with DISH Network

On the terms and subject to the conditions set forth in the Amended Merger Agreement, at the Effective Time, each share of DISH Network Class A Common Stock outstanding immediately prior to the Effective Time was converted into EchoStar Class A Common Stock equal to the Exchange Ratio. See Note 1 for further information. In addition, on the terms and subject to the conditions set forth in the Amended Merger Agreement, at the Effective Time, the Convertible Notes, the convertible note hedge transactions, and the warrant transactions changed into a right to convert or purchase EchoStar Class A Common Stock. See Note 10 for further information.

The following table presents EPS amounts for all periods and the basic and diluted weighted-average shares outstanding used in the calculation.

	For the Years Ended December 31,		
	2023	2022	2021
	(In thousands, except per share amounts)		
Net income (loss)	$ (1,634,824)	$ 2,536,892	$ 2,521,435
Less: Net income (loss) attributable to noncontrolling interests, net of tax	67,233	59,172	35,150
Net income (loss) attributable to EchoStar - Basic	(1,702,057)	2,477,720	2,486,285
Interest on dilutive Convertible Notes, net of tax (1)	—	—	—
Net income (loss) attributable to EchoStar - Diluted	$ (1,702,057)	$ 2,477,720	$ 2,486,285
Weighted-average common shares outstanding - Class A and B common stock:			
Basic	270,842	270,102	275,117
Dilutive impact of Convertible Notes (2)	—	37,550	37,550
Dilutive impact of stock awards outstanding (2)	—	81	455
Diluted	270,842	307,733	313,122
Earnings per share - Class A and B common stock:			
Basic net income (loss) per share attributable to EchoStar	$ (6.28)	$ 9.17	$ 9.04
Diluted net income (loss) per share attributable to EchoStar	$ (6.28)	$ 8.05	$ 7.94

(1) For the years ended December 31, 2023, 2022 and 2021, substantially all of our interest expense was capitalized. See Note 2 for further information.
(2) For the year ended December 31, 2023, the dilutive impact of 38 million weighted-average shares of Class A common stock were excluded from the computation of "Diluted net income (loss) per share attributable to EchoStar" because the effect would have been anti-dilutive as a result of the net loss attributable to EchoStar in the period.

Certain stock awards to acquire our Class A common stock are not included in the weighted-average common shares outstanding above, as their effect is anti-dilutive. In addition, vesting of performance/market based options and rights to acquire shares of our Class A common stock granted pursuant to our performance based stock incentive plans ("Restricted Performance Units") are both contingent upon meeting certain goals, some of which are not yet probable of being achieved. Furthermore, the warrants that we issued to certain option counterparties in connection with the Convertible Notes due 2026 are only exercisable at their expiration if the market price per share of our Class A common stock is greater than the strike price of the warrants, which is at price ranges of approximately $185.75 to $245.33 per share (adjusted per share price pursuant to the Amended Merger Agreement), subject to certain adjustments. As a consequence, the following are not included in the diluted EPS calculation.

	As of December 31,		
	2023	2022	2021
		(In thousands)	
Anti-dilutive stock awards	10,906	9,680	7,426
Performance/market based options	4,631	5,285	4,896
Restricted Performance Units/Awards	-	388	467
Common stock warrants	16,151	16,151	16,151
Total	31,688	31,504	28,940

4. Supplemental Data - Statements of Cash Flows

The following table presents certain supplemental cash flow and other non-cash data. See Note 9 for supplemental cash flow and non-cash data related to leases.

	For the Years Ended December 31,		
	2023	2022	2021
		(In thousands)	
Cash paid for interest (including capitalized interest)	$ 1,400,524	$ 1,144,915	$ 906,925
Cash received for interest	163,729	30,264	11,888
Cash paid for income taxes, net of refunds	15,634	98,930	98,456
Capitalized interest (1)	1,335,129	1,084,880	858,605
Employee benefits paid in Class A common stock	20,101	33,389	37,446
Convertible debt reclassified per ASU 2020-06	—	—	1,051,344
Deferred taxes reclassified per ASU 2020-06	—	—	245,778
Vendor financing	87,343	108,048	26,627
FCC licenses reclassification	—	122,657	915,449
Accrued capital expenditures	238,231	403,134	463,092
Asset retirement obligation	74,189	122,390	50,765
Revaluation of contingent liabilities	—	47,916	—
Non-cash net assets received as part of the India JV formation	—	36,701	—

(1) See Note 2 for further information.

5. Other Comprehensive Income (Loss)

The following table presents the tax effect on each component of "Other comprehensive income (loss)" and excludes noncontrolling interest:

	For the Years Ended December 31,								
	2023			2022			2021		
	Before Tax Amount	Tax (Expense) Benefit	Net of Tax Amount	Before Tax Amount	Tax (Expense) Benefit	Net of Tax Amount	Before Tax Amount	Tax (Expense) Benefit	Net of Tax Amount
					(In thousands)				
Foreign currency translation adjustments	$ 15,479	$ (503)	$ 14,976	$ 33,742	$ 710	$ 34,452	$ (17,885)	$ (482)	$ (18,367)
Unrealized holding gains (losses) on available-for-sale securities	(306)	65	(241)	536	(1,071)	(535)	(694)	998	304
Recognition of previously unrealized (gains) losses on available-for-sale securities included in net income (loss)	550	(74)	476	(25)	2	(23)	(25)	3	(22)
Other	—	—	—	2,660	—	2,660	(5,005)	—	(5,005)
Other comprehensive income (loss)	$ 15,723	$ (512)	$ 15,211	$ 36,913	$ (359)	$ 36,554	$ (23,609)	$ 519	$ (23,090)

The "Accumulated other comprehensive income (loss)" is detailed in the following table, net of tax and excludes noncontrolling interest:

Accumulated Other Comprehensive Income (Loss)	Foreign Currency Translation Adjustment	Unrealized/ Recognized Gains (Losses)	Other	Total
		(In thousands)		
Balance as of December 31, 2021	$ (209,499)	$ 436	$ (2,758)	$ (211,821)
Foreign currency translation adjustments	34,452	—	—	34,452
Other comprehensive income (loss) before reclassification	—	(535)	2,660	2,125
Amounts reclassified from accumulated other comprehensive income (loss)	—	(23)	—	(23)
Balance as of December 31, 2022	$ (175,047)	$ (122)	$ (98)	$ (175,267)
Foreign currency translation adjustments	14,878	—	98	14,976
Other comprehensive income (loss) before reclassification	—	(241)	—	(241)
Amounts reclassified from accumulated other comprehensive income (loss)	—	476	—	476
Balance as of December 31, 2023	$ (160,169)	$ 113	$ —	$ (160,056)

6. Marketable Investment Securities, Restricted Cash and Cash Equivalents, and Other Investment Securities

Our marketable investment securities, restricted cash and cash equivalents, and other investment securities consisted of the following:

	As of	
	December 31, 2023	December 31, 2022
	(In thousands)	
Marketable investment securities:		
Current marketable investment securities:		
Strategic - available-for-sale	$ 144	$ 144
Strategic - trading/equity	176,205	119,445
Other	446,695	1,690,309
Total current marketable investment securities	623,044	1,809,898
Restricted marketable investment securities (1)	27,840	52,744
Total marketable investment securities	650,884	1,862,642
Restricted cash and cash equivalents (1)	90,225	64,267
Other investment securities, net:		
Equity method investments	169,038	213,178
Cost method investments	106,134	142,057
Fair value method and other debt investments	39,198	169,670
Total other investment securities, net	314,370	524,905
Total marketable investment securities, restricted cash and cash equivalents, and other investment securities, net	$ 1,055,479	$ 2,451,814

(1) Restricted marketable investment securities and restricted cash and cash equivalents are included in "Restricted cash, cash equivalents and marketable investment securities" on our Consolidated Balance Sheets.

Marketable Investment Securities

Our marketable investment securities portfolio may consist of debt and equity instruments. All equity securities are carried at fair value, with changes in fair value recognized in "Other, net" within "Other Income (Expense)" on our Consolidated Statements of Operations and Comprehensive Income (Loss). All debt securities are classified as available-for-sale and are recorded at fair value. We report the temporary unrealized gains and losses related to changes in market conditions of marketable debt securities as a separate component of "Accumulated other comprehensive income (loss)" within "Stockholders' Equity (Deficit)," net of related deferred income tax on our Consolidated Balance Sheets. The corresponding changes in the fair value of marketable debt securities, which are determined to be company specific credit losses are recorded in "Other, net" within "Other Income (Expense)" on our Consolidated Statements of Operations and Comprehensive Income (Loss). See Note 2 for further information.

Current Marketable Investment Securities – Strategic

Our current strategic marketable investment securities portfolio includes and may include strategic and financial debt and/or equity investments in private and public companies that are highly speculative and have experienced and continue to experience volatility. As of December 31, 2023, this portfolio consisted of securities of a small number of issuers, and as a result the value of that portfolio depends, among other things, on the performance of those issuers. The fair value of certain of the debt and equity securities in this portfolio can be adversely impacted by, among other things, the issuers' respective performance and ability to obtain any necessary additional financing on acceptable terms, or at all.

Current Marketable Investment Securities – Other

Our current other marketable investment securities portfolio includes investments in various debt instruments including, among others, commercial paper, corporate securities and United States treasury and/or agency securities. Commercial paper consists mainly of unsecured short-term, promissory notes issued primarily by corporations with maturities ranging up to 365 days. Corporate securities consist of debt instruments issued by corporations with various maturities normally less than 18 months. U.S. Treasury and agency securities consist of debt instruments issued by the federal government and other government agencies.

Restricted Cash, Cash Equivalents and Marketable Investment Securities

As of December 31, 2023 and 2022, our restricted marketable investment securities, together with our restricted cash and cash equivalents, included amounts required as collateral for our letters of credit and trusts.

Other Investment Securities, net

We have strategic investments in certain debt and/or equity securities that are included in noncurrent “Other investment securities, net” on our Consolidated Balance Sheets. Our debt securities are classified as available-for-sale and are recorded at fair value. Generally, our debt investments in non-publicly traded debt instruments without a readily determinable fair value are recorded at amortized cost. Our equity investments where we have the ability to exercise significant influence over the investee are accounted for using the equity method of accounting. Certain of our equity method investments are detailed below.

NagraStar L.L.C. We own a 50% interest in NagraStar L.L.C. (“NagraStar”), a joint venture that is our primary provider of encryption and related security systems intended to assure that only authorized customers have access to our programming. The three main technologies NagraStar provides to its customers are microchips, set-top box software, and uplink computer systems. NagraStar also provides end-to-end platform security testing services.

Invidi Technologies Corporation. We own a 35% interest in Invidi Technologies Corporation (“Invidi”), an entity that provides proprietary software for the addressable advertising market. Invidi contracts with multichannel video programming distributers to include its software in their respective set-top boxes and DVRs in order to deliver targeted advertisements based on a variety of demographic attributes selected by the advertisers. Invidi has also developed a cloud-based solution for internet protocol-based platforms.

TerreStar Solutions, Inc. We own a 40% interest in TerreStar Solutions, Inc. (“TSI”), an entity that provides wireless mobile communication coverage in Canada using a satellite user terminal. TSI’s wireless communications system is based on a satellite and ground-based technology, which provides communication services in hard-to-reach areas and provides a nationwide interoperable, survivable and critical communications infrastructure. TSI also holds and leases certain 2 GHz wireless spectrum licenses in Canada.

Deluxe/EchoStar LLC. We own 50% of Deluxe/EchoStar LLC (“Deluxe”), a joint venture that we entered into in 2010 to build an advanced digital cinema satellite distribution network targeting delivery to digitally equipped theaters in the U.S. and Canada.

Broadband Connectivity Solutions (Restricted) Limited. We own 20% of Broadband Connectivity Solutions (Restricted) Limited (together with its subsidiaries, “BCS”), a joint venture that we entered into in 2018 to provide commercial Ka-band satellite broadband services across Africa, the Middle East and southwest Asia operating over Yahsat’s Al Yah 2 and Al Yah 3 Ka-band satellites.

We also hold investments that are not accounted for using the equity method of accounting, which are measured at fair value. Investments in equity securities without readily determinable fair values are accounted for at cost, less impairment, and adjusted for observable price changes for identical or similar investments of the same issuer.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Our ability to realize value from our strategic investments in securities that are not publicly traded depends on, among other things, the success of the issuers' businesses and their ability to obtain sufficient capital, on acceptable terms or at all, and to execute their business plans. Because private markets are not as liquid as public markets, there is also increased risk that we will not be able to sell these investments, or that when we desire to sell them we will not be able to obtain fair value for them.

Fair Value Measurements

Our investments measured at fair value on a recurring basis were as follows:

	As of							
	December 31, 2023				December 31, 2022			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
	(In thousands)							
Cash equivalents (including restricted)	$ 1,692,849	$ 573,504	$ 1,119,345	$ —	$ 2,216,929	$ 174,707	$ 2,042,222	$ —
Debt securities (including restricted):								
U.S. Treasury and agency securities	$ 65,172	$ 65,172	$ —	$ —	$ 33,807	$ 33,807	$ —	$ —
Commercial paper	290,398	—	290,398	—	1,384,251	—	1,384,251	—
Corporate securities	114,265	—	114,265	—	316,939	—	316,939	—
Other	4,844	—	4,700	144	8,200	4,985	3,071	144
Equity securities	176,205	166,481	9,724	—	119,445	109,657	9,788	—
Total	$ 650,884	$ 231,653	$ 419,087	$ 144	$ 1,862,642	$ 148,449	$ 1,714,049	$ 144

As of December 31, 2023, restricted and non-restricted marketable investment securities included debt securities of $475 million with contractual maturities within one year. Actual maturities may differ from contractual maturities as a result of our ability to sell these securities prior to maturity.

Derivative Instruments

We have the option to purchase certain of T-Mobile's 800 MHz spectrum licenses from T-Mobile at a fixed price. This instrument meets the definition of a derivative and is valued based upon, among other things, our estimate of the underlying asset price, the expected term, volatility, the risk free rate of return and the probability of us exercising the option. The instrument acquisition date fair value was $713 million. The derivative is remeasured quarterly. As of December 31, 2023 and December 31, 2022, the derivative's fair value was zero and $1.693 billion, respectively, and is included in "Other noncurrent assets, net" on our Consolidated Balance Sheets. The change in the derivative's carrying value was primarily driven by a decrease in our estimated probability of exercising the option to zero. All changes in the derivative's fair value are recorded in "Other, net" on our Consolidated Statements of Operations and Comprehensive Income (Loss). See the table below.

On June 30, 2023, the United States Department of Justice, Antitrust Division (the "DOJ") provided notice to the United States District Court for the District of Columbia (the "District Court") that, pursuant to its discretion under the Final Judgment, it granted a 60-day extension of the deadline for T-Mobile to divest the 800 MHz spectrum licenses, which expired on August 30, 2023.

On August 17, 2023, we filed a petition with the District Court seeking an extension of the deadline for T-Mobile to divest the 800 MHz spectrum licenses.

On October 15, 2023, we and T-Mobile entered into an amendment to the License Purchase Agreement (the "Amendment") that, among other things, extends the date by which we may purchase the 800 MHz spectrum licenses to April 1, 2024 (the "Extension"). In connection with the Extension, we agreed to make an upfront payment of $100 million (the "Upfront Payment") to T-Mobile. The Amendment also resolves all outstanding disputes between the parties with respect to the License Purchase Agreement. On October 25, 2023, we paid the $100 million Upfront Payment to T-Mobile.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

The Amendment has been approved by the DOJ in accordance with the Stipulation and Order filed in the District Court on July 26, 2019 and the Final Judgment entered by the District Court on April 1, 2020. The Amendment became effective upon the District Court entering the Amended Final Judgment on October 23, 2023.

The Upfront Payment is fully creditable against the purchase price in the event we exercise our option to purchase the 800 MHz spectrum licenses from T-Mobile. T-Mobile has the right (but not the obligation) to pursue an alternative offer between now and April 1, 2024 provided that we retain the first right to purchase the spectrum before April 1, 2024. If we elect to not exercise the option to purchase the 800 MHz spectrum licenses pursuant to the License Purchase Agreement or it expires, T-Mobile will retain the $100 million Upfront Payment per the Amendment.

Throughout 2023, we were actively involved in negotiations with counterparties to obtain the financing necessary to exercise the 800 MHz purchase option. However, we have been unsuccessful in our attempts to reach terms for a definitive financing agreement. Due to the relatively short time remaining before the 800 MHz purchase option's expiration on April 1, 2024, we no longer believe it is probable that we will exercise the option. Therefore, we reduced the probability weighted value of the spectrum option to zero. As a result of the probability weighted derivative's fair value being zero, during the fourth quarter and the year ended December 31, 2023, a loss of $1.601 billion and $1.793 billion, respectively, (both including the $100 million prepayment previously made to T-Mobile) was recorded in "Other, net" on our Consolidated Statements of Operations and Comprehensive Income (Loss). We still maintain the right to exercise the purchase option until it expires on April 1, 2024. If we elect to exercise the option and purchase these licenses, we will record the licenses at fair value at that date in "Regulatory authorizations, net" on our Consolidated Balance Sheets and record a corresponding gain, net of our exercise price, on our Consolidated Statements of Operations and Comprehensive Income (Loss).

We account for our option to purchase certain T-Mobile's 800 MHz spectrum licenses under the License Purchase Agreement as a Level 3 instrument within the fair value hierarchy.

Gains and Losses on Sales and Changes in Carrying Amounts of Investments and Other

"Other, net" within "Other Income (Expense)" included on our Consolidated Statements of Operations and Comprehensive Income (Loss) is as follows:

Other, net:	For the Years Ended December 31, 2023	2022	2021
		(In thousands)	
Marketable and non-marketable investment securities - realized and unrealized gains (losses) (1)	$ 13,664	$ 73,293	$ 66,394
Derivative instruments - net realized and/or unrealized gains (losses) (2)	(1,793,387)	1,015,387	(13,000)
Other investment securities - other-than-temporary impairments (3)	(39,800)	—	(55,266)
Gains (losses) related to early redemption of debt (4)	73,024	(922)	(3,587)
Foreign currency transaction gains (losses)	5,677	5,235	(12,612)
Equity in earnings (losses) of affiliates	(8,098)	(3,087)	(6,221)
Other	(21,872)	(1,465)	29,008
Total	$ (1,770,792)	$ 1,088,441	$ 4,716

(1) During the year ended December 31, 2023, we recorded a loss of $24 million related to a decline in value of an investment previously held on a cost-basis method, due to fair value becoming determinable as a result of a merger between that entity and a publicly traded entity. Starting September 30, 2023, and for all subsequent periods, the investment is classified as marketable investment securities.

(2) The change in the derivative's carrying value for the year ended December 31, 2023 was primarily driven by a decrease in our estimated probability of exercising the option. This amount includes the $100 million prepayment previously made to T-Mobile.

(3) During the year ended December 31, 2023, we recorded a $33 million impairment for BCS as a result of increased competition and the economic environment for this business. We estimated the fair value of our investment by using the combination of the discounted cash flow model and market value approach.

(4) This change primarily resulted from repurchases of our Convertible Notes and 5 7/8% Senior Notes due 2024 during the year ended December 31, 2023. See Note 10 for further information.

7. Inventory

Inventory consisted of the following:

	As of December 31,	
	2023	2022
	(In thousands)	
Finished goods	$ 512,894	$ 521,600
Work-in-process and service repairs	68,463	35,759
Consignment (1)	56,360	14,792
Raw materials	27,452	53,828
Total inventory	$ 665,169	$ 625,979

(1) This change primarily resulted from a distribution agreement related to certain Boost postpaid wireless devices.

8. Property and Equipment and Intangible Assets

Property and Equipment

Property and equipment consisted of the following:

	Depreciable Life (In Years)	As of December 31, 2023	As of December 31, 2022
		(In thousands)	
Equipment leased to customers	2 - 5	$ 1,977,450	$ 2,161,173
Satellites	5 - 15	4,168,766	3,527,788
Satellites acquired under finance lease agreements	15	712,832	705,090
Furniture, fixtures, equipment and other	1 - 20	1,691,389	1,479,063
5G Network Deployment equipment (1)	3 - 15	4,263,327	770,153
Software and computer equipment	2 - 6	2,503,597	2,026,648
Buildings and improvements	1 - 40	538,815	497,386
Land	-	46,675	46,638
Construction in progress	-	1,844,338	3,979,145
Total property and equipment		17,747,189	15,193,084
Accumulated depreciation		(8,185,355)	(7,288,127)
Property and equipment, net		$ 9,561,834	$ 7,904,957

(1) Includes 5G Network Deployment assets acquired under finance lease agreements.

Construction in progress consisted of the following:

	As of	
	December 31, 2023	December 31, 2022
	(In thousands)	
Pay-TV	$ 162,055	$ 36,936
Retail Wireless	—	—
5G Network Deployment	1,639,945	3,133,687
Broadband and Satellite Services (1)	42,338	808,522
Total construction in progress	$ 1,844,338	$ 3,979,145

(1) In August 2017, we entered into a contract for the design and construction of the EchoStar XXIV satellite, a next-generation, high throughput geostationary satellite. The satellite began service in December 2023 and is expected to bring further consumer broadband capacity across North and South America and generate additional sales in other markets, including in-flight Wi-Fi, enterprise networking and cellular backhaul for mobile network operators across the two continents. The satellite was placed into service in the fourth quarter of 2023.

Depreciation and amortization expense consisted of the following:

	For the Years Ended December 31,		
	2023	2022	2021
		(In thousands)	
Equipment leased to customers	$ 329,449	$ 400,651	$ 473,130
Satellites	264,433	268,994	318,685
Buildings, furniture, fixtures, equipment and other	144,722	98,762	96,658
5G Network Deployment equipment	371,640	29,992	8,263
Software and computer equipment	270,200	185,538	118,671
Intangible assets and other amortization expense	217,479	190,958	198,539
Total depreciation and amortization	$ 1,597,923	$ 1,174,895	$ 1,213,946

Cost of sales and operating expense categories included in our accompanying Consolidated Statements of Operations and Comprehensive Income (Loss) do not include depreciation and amortization expense related to satellites, equipment leased to customers, or our 5G Network Deployment equipment and software, and amortization of development costs of externally marketed software.

Activity relating to our asset retirement obligations was as follows:

	As of	
	December 31, 2023	December 31, 2022
	(In thousands)	
Balance at beginning of period	$ 183,135	$ 51,551
Liabilities incurred	74,189	124,822
Accretion expense	20,963	6,762
Revision to estimated cash flows	—	—
Balance at end of period	$ 278,287	$ 183,135
Total included in Other long-term liabilities	$ 278,287	$ 183,135

The corresponding assets, net of accumulated depreciation, related to asset retirement obligations were $217 million and $162 million as of December 31, 2023 and 2022, respectively.

Satellites Pay-TV Segment

Our Pay-TV segment currently utilizes nine satellites in geostationary orbit approximately 22,300 miles above the equator, seven of which we own and depreciate over their estimated useful life. We also lease two satellites from third parties: Anik F3, which is accounted for as an operating lease, and Nimiq 5, which is accounted for as a finance lease and is depreciated over its economic life. As of July 2023, we no longer lease the Ciel II satellite.

As of December 31, 2023, our Pay-TV segment satellite fleet consisted of the following:

Satellites	Launch Date	Degree Orbital Location	Lease Termination Date
Owned:			
EchoStar X	February 2006	110	N/A
EchoStar XI	July 2008	110	N/A
EchoStar XIV	March 2010	119	N/A
EchoStar XV	July 2010	61.5	N/A
EchoStar XVI	November 2012	61.5	N/A
EchoStar XVIII	June 2016	61.5	N/A
EchoStar XXIII	March 2017	110	N/A
Under Construction:			
EchoStar XXV	2026	110	N/A
Leased from Other Third-Party:			
Anik F3	April 2007	118.7	April 2025
Nimiq 5	September 2009	72.7	September 2024

Satellite Under Construction

EchoStar XXV. On March 20, 2023, we entered into a contract with Maxar Space LLC for the construction of EchoStar XXV, a DBS satellite that is capable of providing service to the continental United States ("CONUS") and is intended to be used at the 110 degree orbital location. During the fourth quarter of 2023, we entered into an agreement with Space Exploration Technologies Corp ("SpaceX") for launch services for this satellite, which is expected to be launched during 2026.

Satellite Anomalies

Operation of our DISH TV services requires that we have adequate satellite transmission capacity for the programming that we offer. While we generally have had in-orbit satellite capacity sufficient to transmit our existing channels and some backup capacity to recover the transmission of certain critical programming, our backup capacity is limited.
In the event of a failure or loss of any of our owned or leased satellites, we may need to acquire or lease additional satellite capacity or relocate one of our other owned or leased satellites and use it as a replacement for the failed or lost satellite. Such a failure could result in a prolonged loss of critical programming or a significant delay in our plans to expand programming as necessary to remain competitive and thus may have a material adverse effect on our business, financial condition and results of operations.

In the past, certain of our owned and leased satellites have experienced anomalies, some of which have had a significant adverse impact on their remaining useful life and/or commercial operation. There can be no assurance that future anomalies will not impact the remaining useful life and/or commercial operation of any of the owned and leased satellites in our fleet. See Note 2 for further information on evaluation of impairment. There can be no assurance that we can recover critical transmission capacity in the event one or more of our owned or leased in-orbit satellites were to fail. We generally do not carry commercial launch or in-orbit insurance on any of the satellites that we own and therefore, we will bear the risk associated with any uninsured launch or in-orbit satellite failures.

Satellites - Broadband and Satellite Services Segment

Our Broadband and Satellite Services segment currently utilizes nine satellites in geostationary orbit approximately 22,300 miles above the equator, six of which we own and depreciate over their estimated useful life. We also lease three satellites from third parties, which are accounted for as finance leases and are depreciated over their economic life.

As of December 31, 2023, our Broadband and Satellite Services segment satellite fleet consisted of the following:

Satellites	Launch Date	Degree Orbital Location	Lease Termination Date
Owned:			
EchoStar IX	August 2003	121	N/A
EchoStar XVII	July 2012	107	N/A
EchoStar XIX	December 2016	97.1	N/A
EchoStar XXI	June 2017	10.25	N/A
Al Yah 3	January 2018	20	N/A
EchoStar XXIV	July 2023	95.2	N/A
Leased from Other Third-Party:			
Eutelsat 65 West A	March 2016	65	July 2031
Telesat T19V	July 2018	63	August 2033
EchoStar 105/SES-11	October 2017	105	November 2028

Eutelsat 10A satellite was deorbited in the fourth quarter of 2023. The Spaceway 3 satellite was deorbited in January 2024 and is excluded from the table above.

Satellite Anomalies and Impairments

Our satellites may experience anomalies from time to time, some of which may have a significant adverse effect on their remaining useful lives, the commercial operation of the satellites or our operating results or financial position. We are not aware of any anomalies with respect to our owned or leased satellites that have had any such significant adverse effect during the year ended December 31, 2023.

There can be no assurance that future anomalies will not impact the remaining useful life and/or commercial operation of any of the owned and leased satellites in our fleet. See Note 2 for further information on evaluation of impairment. There can be no assurance that we can recover critical transmission capacity in the event one or more of our owned or leased in-orbit satellites were to fail.

We generally do not carry in-orbit insurance on our satellites or payloads because we have assessed that the cost of insurance is not economical relative to the risk of failures. Therefore, we generally bear the risk of any in-orbit failures. Pursuant to the terms of our joint venture agreement with Al Yah Satellite Communications Company PrJSC (“Yahsat”) in Brazil in 2019, we are required to maintain insurance for the Al Yah 3 Brazilian payload during the commercial in-orbit service of such payload, subject to certain limitations on coverage. The insurance policies were procured by Yahsat, under which we and Yahsat are the beneficiaries of any claims in proportion to their shareholdings. An insurance claim was submitted in the second quarter of 2023 for compensation with respect to the reduction in estimated useful life of the Al Yah 3 satellite. We have obtained certain insurance for our EchoStar XXIV satellite covering launch plus the first year of operations. We will continue to assess circumstances going forward and make insurance-related decisions on a case-by-case basis.

Intangible Assets

As of December 31, 2023 and 2022, our identifiable intangibles subject to amortization consisted of the following:

	As of			
	December 31, 2023		December 31, 2022	
	Intangible Assets	Accumulated Amortization	Intangible Assets	Accumulated Amortization
	(In thousands)			
Technology-based	$ 115,166	$ (111,989)	$ 114,945	$ (111,422)
Trademarks	164,834	(90,326)	164,834	(78,209)
Contract-based	41,500	(41,500)	41,500	(41,500)
Customer relationships	902,858	(807,651)	903,083	(637,442)
Total	$ 1,224,358	$ (1,051,466)	$ 1,224,362	$ (868,573)

These identifiable intangibles are included in "Intangible assets, net" on our Consolidated Balance Sheets. Amortization of these intangible assets is recorded on a straight-line basis over an average finite useful life primarily ranging from approximately two to 20 years. Amortization was $183 million, $156 million and $169 million for the years ended December 31, 2023, 2022 and 2021, respectively.

Estimated future amortization of our identifiable intangible assets as of December 31, 2023 is as follows (in thousands):

For the Years Ended December 31,	
	(In thousands)
2024	$ 97,918
2025	15,812
2026	14,115
2027	12,851
2028	12,357
Thereafter	19,617
Total	$ 172,670

Goodwill

Goodwill represents the excess of the consideration transferred over the estimated fair values of assets acquired and liabilities assumed as of the acquisition date and is not subject to amortization but is subject to impairment testing annually or whenever indicators of impairment arise.

During the year ended December 31, 2023 we recorded a noncash impairment charge for goodwill of $758 million in "Impairment of long-lived assets and goodwill" on our Consolidated Statements of Operations and Comprehensive Income (Loss). See Note 2 for further information. The non-recurring measurement of fair value of goodwill is classified as Level 3 in the fair value hierarchy.

As of December 31, 2023 and 2022, our Goodwill consisted of the following:

	As of	
	December 31, 2023	December 31, 2022
	(In thousands)	
Pay-TV	$ —	$ 6,457
Retail Wireless	—	98,657
5G Network Deployment	—	119,903
Broadband and Satellite Services	—	532,491
Total goodwill	$ —	$ 757,508

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Regulatory Authorizations – Pay-TV and 5G Network Deployment Segments

As of December 31, 2023 and 2022, our Regulatory Authorizations with indefinite lives consisted of the following:

	As of December 31,	
	2023	2022
	(In thousands)	
Owned:		
DBS Licenses	$ 677,409	$ 677,409
700 MHz Licenses	711,871	711,871
AWS-4 Licenses	1,940,000	1,940,000
H Block Licenses	1,671,506	1,671,506
600 MHz Licenses	6,213,335	6,212,579
MVDDS Licenses	24,000	24,000
28 GHz Licenses	2,883	2,883
24 GHz Licenses	11,772	11,772
37 GHz, 39 GHz & 47 GHz Licenses	202,533	202,533
3550-3650 MHz Licenses	912,939	912,939
3.7-3.98 GHz Licenses	2,969	2,688
3.45-3.55 GHz Licenses	7,327,989	7,327,989
1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz	972	—
AWS-3	5,618,930	5,618,930
Subtotal	25,319,108	25,317,099
Noncontrolling Investments:		
SNR	4,271,459	4,271,459
Capitalized Interest (1)	8,523,682	7,344,515
Total	$ 38,114,249	$ 36,933,073

(1) See Note 2 for further information.

Regulatory Authorizations – Broadband and Satellite Services Segment

As of December 31, 2023 and 2022, our Regulatory Authorizations for our Broadband and Satellite Services segment with indefinite lives consisted of the following:

	As of December 31,	
	2023	2022
	(In thousands)	
95 W	$ 200,000	$ 200,000
107 W	200,000	200,000
Sirion-1 Filing	39,160	39,160
Total	$ 439,160	$ 439,160

As of December 31, 2023 and 2022, our Regulatory Authorizations with finite lives consisted of the following:

	As of			
	December 31, 2023		December 31, 2022	
	Finite Lived Assets	Accumulated Amortization	Finite Lived Assets	Accumulated Amortization
	(In thousands)			
Total	$ 58,061	$ (38,490)	$ 55,317	$ (31,946)

These identifiable intangibles are included in "Regulatory Authorizations, net" on our Consolidated Balance Sheets. Amortization of these intangible assets is recorded on a straight-line basis over an average finite useful life of thirteen years. Amortization was $5 million for the year ended December 31, 2023 and $4 million and $4 million for the years ended December 31, 2022 and 2021, respectively. Foreign currency translation adjustments were gains of $1 million, losses of $2 million and gains of $1 million for the years ended December 31, 2023, 2022 and 2021, respectively.

Estimated future amortization of our identifiable intangible assets as of December 31, 2023 is as follows (in thousands):

For the Years Ended December 31,		
		(In thousands)
2024	$	5,607
2025		4,055
2026		4,055
2027		1,880
2028		589
Thereafter		3,385
Total	$	19,571

9. Leases

Lessee Accounting

We enter into non-cancelable operating and finance leases for, among other things, communication towers, satellites, satellite-related ground infrastructure, data centers, office space, dark fiber and transport equipment, warehouses and distribution centers, vehicles and other equipment. Substantially all of our leases have remaining lease terms from one to 13 years, some of which include renewal options, and some of which include options to terminate the leases within one year. For certain arrangements, the lease term includes the non-cancelable period plus the renewal period that we are reasonably certain to exercise.

Our Eutelsat 65 West A, Telesat T19V and EchoStar 105/SES-11 satellites are accounted for as finance leases within our Broadband and Satellite Services segment. Through the first quarter of 2022, our Anik F3 and Nimiq 5 satellites were accounted for as finance leases within our Pay-TV segment. However, during April 2022, we extended the Anik F3 lease and as a result it is currently accounted for as an operating lease. Substantially all of our remaining leases are accounted for as operating leases.

The components of lease expense were as follows:

	For the Years Ended December 31,					
	2023		2022		2021	
			(In thousands)			
Operating lease cost (1)	$	538,805	$	355,871	$	111,336
Short-term lease cost (2)		4,765		4,914		4,800
Finance lease cost (3):						
Amortization of right-of-use assets		102,724		57,942		95,237
Interest on lease liabilities		14,090		12,151		14,741
Total finance lease cost		116,814		70,093		109,978
Total lease costs	$	660,384	$	430,878	$	226,114

(1) The increase in operating lease cost is primarily related to communication tower leases.
(2) Leases that have terms of 12 months or less.
(3) The decrease in finance lease cost for the year ended December 31, 2022 is primarily related to the QuetzSat-1 finance lease, which expired in November 2021, as well as the Anik F3 finance lease that was extended in April 2022 and as a result is currently accounted for as an operating lease. The increase in finance lease cost for the year ended December 31, 2023 is primarily related to equipment for our 5G Network Deployment.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Supplemental cash flow information related to leases was as follows:

	For the Years Ended December 31,		
	2023	2022	2021
		(In thousands)	
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash flows from operating leases	$ 367,438	$ 186,372	$ 93,227
Operating cash flows from finance leases	$ 13,400	$ 11,060	$ 12,917
Financing cash flows from finance leases	$ 53,467	$ 42,740	$ 63,109
Right-of-use assets obtained in exchange for lease obligations:			
Operating leases	$ 753,935	$ 1,402,357	$ 1,489,637
Finance leases	$ 53,771	$ 66,312	$ —

Supplemental balance sheet information related to leases was as follows:

	As of	
	December 31, 2023	December 31, 2022
	(In thousands)	
Operating Leases:		
Operating lease assets (1)	$ 3,065,448	$ 2,823,834
Other current liabilities (1)	$ 317,395	$ 210,855
Operating lease liabilities (1)	3,121,307	2,808,774
Total operating lease liabilities (1)	$ 3,438,702	$ 3,019,629
Finance Leases:		
Property and equipment, gross	$ 833,933	$ 772,420
Accumulated depreciation	(520,344)	(425,696)
Property and equipment, net	$ 313,589	$ 346,724
Other current liabilities	$ 56,459	$ 48,066
Other long-term liabilities	67,199	75,287
Total finance lease liabilities	$ 123,658	$ 123,353
Weighted Average Remaining Lease Term:		
Operating leases	10.6 years	11.8 years
Finance leases	2.2 years	2.7 years
Weighted Average Discount Rate:		
Operating leases	9.5%	7.2%
Finance leases	9.7%	9.8%

(1) In the fourth quarter of 2023, we revised certain terms with a vendor supplying communication towers. The revision in terms resulted in a lease modification, which was not accounted for as a separate contract. On the measurement date, we reassessed the terms of the original agreement, including but not limited to the timing of future cash flows, the remaining economic life of the underlying asset, the discount rate and the lease classification. This resulted in a reduction to both the operating lease asset and operating lease liability by approximately $227 million, which is included in “Operating lease assets,” and “Operating lease liabilities” on our Consolidated Balance Sheets.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Maturities of lease liabilities as of December 31, 2023 were as follows:

For the Years Ending December 31,	Maturities of Lease Liabilities: Operating Leases	Finance Leases	Total
		(In thousands)	
2024	$ 448,503	$ 66,073	$ 514,576
2025	485,783	35,392	521,175
2026	516,143	36,588	552,731
2027	515,022	2,574	517,596
2028	471,980	—	471,980
Thereafter	3,170,778	—	3,170,778
Total lease payments	5,608,209	140,627	5,748,836
Less: Imputed interest	(2,169,507)	(16,969)	(2,186,476)
Total	3,438,702	123,658	3,562,360
Less: Current portion	(317,395)	(56,459)	(373,854)
Long-term portion of lease obligations	$ 3,121,307	$ 67,199	$ 3,188,506

Lessor Accounting

The following table presents our lease revenue by type of lease:

	For the Years Ended December 31, 2023	2022	2021
		(In thousands)	
Lease revenue:			
Sales-type lease revenue	$ 13,431	$ 8,777	$ 8,726
Operating lease revenue	42,565	44,350	41,955
Total lease revenue	$ 55,996	$ 53,127	$ 50,681

Substantially all of our net investment in sales-type leases consisted of lease receivables totaling $30 million and $22 million as of December 31, 2023 and 2022, respectively.

The following table presents future operating lease payments to be received as of December 31, 2023:

For the Years Ending December 31,	Total
	(In thousands)
2024	$ 36,008
2025	31,803
2026	30,579
2027	25,752
2028	11,687
Thereafter	34,588
Total lease payments to be received	$ 170,417

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

10. Long-Term Debt and Finance Lease Obligations

Fair Value of our Long-Term Debt

The following table summarizes the carrying amount and fair value of our debt facilities as of December 31, 2023 and 2022:

		As of			
		December 31, 2023		December 31, 2022	
	Issuer	Carrying Amount	Fair Value	Carrying Amount	Fair Value
		(In thousands)			
5% Senior Notes due 2023 (1)	DDBS	$ —	$ —	$ 1,443,179	$ 1,441,635
2 3/8% Convertible Notes due 2024 (2)	DISH	951,168	944,034	1,000,000	906,970
5 7/8% Senior Notes due 2024 (3)	DDBS	1,982,544	1,872,275	2,000,000	1,870,940
0% Convertible Notes due 2025 (4)	DISH	1,957,197	1,228,141	2,000,000	1,287,540
7 3/4% Senior Notes due 2026	DDBS	2,000,000	1,388,060	2,000,000	1,620,280
5 1/4% Senior Secured Notes due 2026	HSSC	750,000	665,678	750,000	727,763
6 5/8% Senior Notes due 2026	HSSC	750,000	591,525	750,000	707,490
3 3/8% Convertible Notes due 2026 (5)	DISH	2,908,801	1,570,753	3,000,000	1,894,230
5 1/4% Senior Secured Notes due 2026	DDBS	2,750,000	2,366,073	2,750,000	2,336,813
11 3/4% Senior Secured Notes due 2027 (6)	DISH	3,500,000	3,668,980	2,000,000	2,071,240
7 3/8% Senior Notes due 2028	DDBS	1,000,000	600,160	1,000,000	708,320
5 3/4% Senior Secured Notes due 2028	DDBS	2,500,000	2,013,125	2,500,000	2,013,675
5 1/8% Senior Notes due 2029	DDBS	1,500,000	774,600	1,500,000	976,755
Other notes payable		160,158	160,158	188,509	188,509
Subtotal		22,709,868	$ 17,843,562	22,881,688	$ 18,752,159
Unamortized deferred financing costs and other debt discounts, net		(69,606)		(108,921)	
Finance lease obligations (7)		123,658		123,353	
Total long-term debt and finance lease obligations (including current portion)		$ 22,763,920		$ 22,896,120	

(1) We had repurchased or redeemed the principal balance of our 5% Senior Notes due 2023 as of March 15, 2023, the instrument's maturity date.

(2) During the year ended December 31, 2023, we repurchased approximately $49 million of our 2 3/8% Convertible Notes due 2024 in open market trades. The remaining balance of approximately $951 million matures on March 15, 2024 and is included in "Current portion of long-term debt and finance lease obligations" on our Consolidated Balance Sheets as of December 31, 2023.

(3) During the year ended December 31, 2023, we repurchased approximately $17 million of our 5 7/8% Senior Notes due 2024 in open market trades. The remaining balance of approximately $1.983 billion matures on November 15, 2024 and is included in "Current portion of long-term debt and finance lease obligations" on our Consolidated Balance Sheets as of December 31, 2023.

(4) During the year ended December 31, 2023, we repurchased approximately $43 million of our 0% Convertible Notes due 2025 in open market trades. The remaining balance of approximately $1.957 billion matures on December 15, 2025.

(5) During the year ended December 31, 2023, we repurchased approximately $91 million of our 3 3/8% Convertible Notes due 2026 in open market trades. The remaining balance of approximately $2.909 billion matures on August 15, 2026.

(6) On January 26, 2023, we issued an additional $1.5 billion aggregate principal amount of our 11 3/4% Senior Secured Notes due 2027.

(7) Disclosure regarding fair value of finance leases is not required.

We estimated the fair value of our publicly traded long-term debt using market prices in less active markets (Level 2).

DISH DBS Unsecured Senior Notes

Our Senior Notes are:

- general unsecured senior obligations of DISH DBS Corporation (“DISH DBS”);
- ranked equally in right of payment with all of DISH DBS’ and the guarantors’ existing and future unsecured senior debt; and
- ranked effectively junior to our and the guarantors’ current and future secured senior indebtedness up to the value of the collateral securing such indebtedness.

The indentures related to our Senior Notes contain restrictive covenants that, among other things, impose limitations on the ability of DISH DBS and its restricted subsidiaries to:

- incur additional debt;
- pay dividends or make distributions on DISH DBS’ capital stock or repurchase DISH DBS’ capital stock;
- make certain investments;
- create liens or enter into sale and leaseback transactions;
- enter into transactions with affiliates;
- merge or consolidate with another company; and
- transfer or sell assets.

In the event of a change of control, as defined in the related indentures, we would be required to make an offer to repurchase all or any part of a holder’s Senior Notes at a purchase price equal to 101% of the aggregate principal amount thereof, together with accrued and unpaid interest thereon, to the date of repurchase.

5 7/8% Senior Notes due 2024

On November 20, 2014, we issued $2.0 billion aggregate principal amount of our ten-year 5 7/8% Senior Notes due November 15, 2024. Interest accrues at an annual rate of 5 7/8% and is payable semi-annually in cash, in arrears on May 15 and November 15 of each year.

The 5 7/8% Senior Notes due 2024 are redeemable, in whole or in part, at any time at a redemption price equal to 100% of the principal amount plus a “make-whole” premium, as defined in the related indenture, together with accrued and unpaid interest.

7 3/4% Senior Notes due 2026

On June 13, 2016, we issued $2.0 billion aggregate principal amount of our ten-year 7 3/4% Senior Notes due July 1, 2026. Interest accrues at an annual rate of 7 3/4% and is payable semi-annually in cash, in arrears on January 1 and July 1 of each year.

The 7 3/4% Senior Notes are redeemable, in whole or in part, at any time at a redemption price equal to 100% of the principal amount plus a “make-whole” premium, as defined in the related indenture, together with accrued and unpaid interest.

7 3/8% Senior Notes due 2028

On July 1, 2020, we issued $1.0 billion aggregate principal amount of our 7 3/8% Senior Notes due July 1, 2028. Interest accrues at an annual rate of 7 3/8% and is payable semi-annually in cash, in arrears on January 1 and July 1 of each year.

The 7 3/8% Senior Notes are redeemable, in whole or in part, at any time prior to July 1, 2023 at a redemption price equal to 100% of the principal amount plus a “make-whole” premium, as defined in the related indenture, together with accrued and unpaid interest. On or after July 1, 2023, we may redeem the Notes, in whole or in part, at any time at the redemption prices specified under the related indenture, together with accrued and unpaid interest.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Prior to July 1, 2023, we may also redeem up to 35% of the 7 3/8% Senior Notes at a specified premium with the net cash proceeds from certain equity offerings or capital contributions.

5 1/8% Senior Notes due 2029

On May 24, 2021, we issued $1.5 billion aggregate principal amount of our 5 1/8% Senior Notes due June 1, 2029. Interest accrues at an annual rate of 5 1/8% and is payable semi-annually in cash, in arrears on June 1 and December 1 of each year.

The 5 1/8% Senior Notes are redeemable, in whole or in part, at any time at a redemption price equal to 100% of the principal amount plus a "make-whole" premium, as defined in the related indenture, together with accrued and unpaid interest. Prior to June 1, 2024, we may also redeem up to 35% of the 5 1/8% Senior Notes at a specified premium with the net cash proceeds from certain equity offerings or capital contributions.

HSSC Unsecured Senior Notes

6 5/8% Unsecured Senior Notes due 2026

On July 27, 2016, our subsidiary Hughes Satellite Systems Corporation ("HSSC") issued $750 million aggregate principal amount of 6 5/8% Senior Unsecured Notes due 2026 (the "2026 Senior Unsecured Notes") at an issue price of 100.0%, pursuant to an indenture dated July 27, 2016 (together with the 2016 Secured Indenture, the "Indentures"). The 2026 Senior Unsecured Notes mature on August 1, 2026. Interest on the 2026 Senior Unsecured Notes accrues at an annual rate of 6 5/8% and is payable semi-annually in cash, in arrears, on February 1 and August 1 of each year.

Our Senior Notes due 2026 are:

- unsecured senior obligations of HSSC;
- ranked equally with all existing and future unsubordinated indebtedness and effectively junior to any secured indebtedness up to the value of the assets securing such indebtedness;
- effectively junior to HSSC's obligations that are secured to the extent of the value of the collateral securing such obligations;
- senior in right of payment to all existing and future obligations of HSSC that are expressly subordinated to the 2026 Senior Unsecured Notes;
- structurally junior to any existing and future obligations of any of HSSC's subsidiaries that do not guarantee the 2026 Senior Unsecured Notes; and
- unconditionally guaranteed, jointly and severally, on a general senior secured basis by certain of HSSC's subsidiaries, which guarantees rank equally with all of the guarantors' existing and future unsubordinated indebtedness, and effectively junior to any secured indebtedness of the guarantors up to the value of the assets securing such indebtedness.

Subject to certain exceptions, the Indentures contain restrictive covenants that, among other things, impose limitations on HSSC's ability and, in certain instances, the ability of certain of HSSC's subsidiaries to:

- incur additional debt;
- pay dividends or make distributions on HSSC's or their capital stock or repurchase HSSC's or their capital stock;
- make certain investments;
- create liens or enter into sale and leaseback transactions;
- enter into transactions with affiliates;
- merge or consolidate with another company;
- transfer and sell assets; and
- allow to exist certain restrictions on its or their ability to pay dividends, make distributions, make other payments, or transfer assets.

In the event of a Change of Control, as defined in the respective Indentures, HSSC would be required to make an offer to repurchase all or any part of a holder's 2026 Senior Unsecured Notes at a purchase price equal to 101.0% of the aggregate principal amount thereof, together with accrued and unpaid interest to the date of repurchase.
The Indentures provide for customary events of default for each series of the 2026 Senior Unsecured Notes, including, among other things, non-payment, breach of the covenants in the applicable Indentures, payment defaults or acceleration of other indebtedness, a failure to pay certain judgments and certain events of bankruptcy, insolvency and reorganization. If any event of default occurs and is continuing with respect to any series of the 2026 Senior Unsecured Notes, the trustee or the holders of at least 25.0% in principal amount of the then outstanding 2026 Senior Unsecured Notes of such series may declare all the 2026 Senior Unsecured Notes of such series to be due and payable immediately, together with any accrued and unpaid interest.

Convertible Notes

Merger with DISH Network

In connection with the completion of the Merger, on December 31, 2023, at the Effective Time, the right of the holders of the Convertible Notes that were outstanding as of the completion of the Merger to convert each $1,000 principal amount of such Convertible Notes into shares of DISH Class A Common Stock was changed into a right to convert such principal amount of Convertible Notes into the number of shares of EchoStar Class A Common Stock that a holder of a number of shares of DISH Class A Common Stock equal to the applicable initial conversion rate (as defined in the applicable Indenture) would have been entitled to receive upon the completion of the Merger. Upon the completion of the Merger, each then-outstanding share of DISH Class A Common Stock was converted into the right to receive 0.350877 shares of EchoStar Common Stock, resulting in an adjusted initial conversion rate of 4.2677 for the 2 3/8% Convertible Notes due 2024, 8.5657 for the 0% Convertible Notes due 2025 and 5.3835 for the 3 3/8% Convertible Notes due 2026 for each $1,000 principal amount. All amounts below represent the adjusted conversion rate.

2 3/8% Convertible Notes due 2024

On March 17, 2017, we issued $1.0 billion aggregate principal amount of the Convertible Notes due March 15, 2024 in a private placement. Interest accrues at an annual rate of 2 3/8% and is payable semi-annually in cash, in arrears on March 15 and September 15 of each year.

The Convertible Notes due 2024 are:

- our general unsecured obligations;
- ranked senior in right of payment to any future indebtedness that is expressly subordinated in right of payment to the Convertible Notes due 2024;
- ranked equally in right of payment with all of our existing and future unsecured senior indebtedness;
- ranked effectively junior to any of our existing and future secured indebtedness to the extent of the value of the assets securing such indebtedness;
- ranked structurally junior to all indebtedness and other liabilities of our subsidiaries; and
- not guaranteed by our subsidiaries.

We may not redeem the Convertible Notes due 2024 prior to the maturity date. If a "fundamental change" (as defined in the related indenture) occurs prior to the maturity date of the Convertible Notes due 2024, holders may require us to repurchase for cash all or part of their Convertible Notes due 2024 at a repurchase price equal to 100% of the principal amount of such Convertible Notes due 2024, plus accrued and unpaid interest to, but not including, the fundamental change repurchase date.

The indenture related to the Convertible Notes due 2024 does not contain any financial covenants and does not restrict us from paying dividends, issuing or repurchasing our other securities, issuing new debt (including secured debt) or repaying or repurchasing our debt.

Subject to the terms of the related indenture, the Convertible Notes due 2024 may be converted at an initial conversion rate of 4.268 shares of our Class A common stock per $1,000 principal amount of Convertible Notes due 2024 (equivalent to an initial conversion price of approximately $234.33 per share of our Class A common stock) (the "Initial Conversion Rate"), at any time on or after October 15, 2023 through the second scheduled trading day preceding the maturity date. Holders of the Convertible Notes due 2024 will also have the right to convert the Convertible Notes due 2024 at the Initial Conversion Rate prior to October 15, 2023, but only upon the occurrence of specified events described in the related indenture. The conversion rate is subject to anti-dilution adjustments if certain events occur. Upon any conversion, we will settle our conversion obligation in cash, shares of our Class A common stock or a combination of cash and shares of our Class A common stock, at our election.

0% Convertible Notes due 2025

On December 21, 2020, we issued $2.0 billion aggregate principal amount of the Convertible Notes due December 15, 2025 in a private placement. These notes will not bear interest, and the principal amount of the Notes will not accrete. The Convertible Notes due 2025 are:

- our general unsecured obligations;
- ranked senior in right of payment to any future indebtedness that is expressly subordinated in right of payment to the Convertible Notes due 2025;
- ranked equally in right of payment with all of our existing and future unsecured senior indebtedness;
- ranked effectively junior to any of our existing and future secured indebtedness to the extent of the value of the assets securing such indebtedness;
- ranked structurally junior to all indebtedness and other liabilities of our subsidiaries; and
- not guaranteed by our subsidiaries.

We may not redeem the Convertible Notes due 2025 prior to the maturity date. If a "fundamental change" (as defined in the related indenture) occurs prior to the maturity date of the Convertible Notes due 2025, holders may require us to repurchase for cash all or part of their Convertible Notes due 2025 at a repurchase price equal to 100% of the principal amount of such Convertible Notes due 2025, plus accrued and unpaid interest to, but not including, the fundamental change repurchase date.

The indenture related to the Convertible Notes due 2025 does not contain any financial covenants and does not restrict us from paying dividends, issuing or repurchasing our other securities, issuing new debt (including secured debt) or repaying or repurchasing our debt.

Subject to the terms of the related indenture, the Convertible Notes due 2025 may be converted at an initial conversion rate of 8.566 shares of our Class A common stock per $1,000 principal amount of the Convertible Notes due 2025 (equivalent to an initial conversion price of approximately $116.74 per share of our Class A common stock) (the "Initial Conversion Rate"), at any time on or after July 15, 2025 through the second scheduled trading day preceding the maturity date. Holders of the Convertible Notes due 2025 will also have the right to convert the Convertible Notes due 2025 at the Initial Conversion Rate prior to July 15, 2025, but only upon the occurrence of specified events described in the related indenture. The conversion rate is subject to anti-dilution adjustments if certain events occur. Upon any conversion, we will settle our conversion obligation in cash, shares of our Class A common stock or a combination of cash and shares of our Class A common stock, at our election.

3 3/8% Convertible Notes due 2026

On August 8, 2016, we issued $3.0 billion aggregate principal amount of the Convertible Notes due August 15, 2026 in a private offering. Interest accrues at an annual rate of 3 3/8% and is payable semi-annually in cash, in arrears on February 15 and August 15 of each year.

The Convertible Notes due 2026 are:

- our general unsecured obligations;
- ranked senior in right of payment to any future indebtedness that is expressly subordinated in right of payment to the Convertible Notes due 2026;
- ranked equally in right of payment with all of our existing and future unsecured senior indebtedness;
- ranked effectively junior to any of our existing and future secured indebtedness to the extent of the value of the assets securing such indebtedness;
- ranked structurally junior to all indebtedness and other liabilities of our subsidiaries; and
- not guaranteed by our subsidiaries.

We may not redeem the Convertible Notes due 2026 prior to the maturity date. If a "fundamental change" (as defined in the related indenture) occurs prior to the maturity date of the Convertible Notes due 2026, holders may require us to repurchase for cash all or part of their Convertible Notes due 2026 at a specified make-whole price equal to 100% of the principal amount of such Convertible Notes due 2026, plus accrued and unpaid interest to, but not including, the fundamental change repurchase date.

The indenture related to the Convertible Notes due 2026 does not contain any financial covenants and does not restrict us from paying dividends, issuing or repurchasing our other securities, issuing new debt (including secured debt) or repaying or repurchasing our debt.

Subject to the terms of the related indenture, the Convertible Notes due 2026 may be converted at an initial conversion rate of 5.383 shares of our Class A common stock per $1,000 principal amount of Convertible Notes due 2026 (equivalent to an initial conversion price of approximately $185.76 per share of our Class A common stock) (the "Initial Conversion Rate"), at any time on or after March 15, 2026 through the second scheduled trading day preceding the maturity date. Holders of the Convertible Notes due 2026 will also have the right to convert the Convertible Notes due 2026 at the Initial Conversion Rate prior to March 15, 2026, but only upon the occurrence of specified events described in the related indenture. The conversion rate is subject to anti-dilution adjustments if certain events occur. Upon any conversion, we will settle our conversion obligation in cash, shares of our Class A common stock or a combination of cash and shares of our Class A common stock, at our election.

Convertible Note Hedge and Warrant Transactions

Merger with DISH Network. In connection with the completion of the Merger, on December 31, 2023, we and DISH Network entered into a note hedge amendment letter agreement with each option counterparty pursuant to which, at the Effective Time, DISH Network's right to purchase shares of DISH Class A Common Stock pursuant to the terms of the applicable convertible note hedge transactions was changed into a right to purchase shares of EchoStar Class A Common Stock.

In addition, in connection with the completion of the Merger, on December 31, 2023, we and DISH Network entered into a warrant amendment letter agreement and warrant guarantee with each option counterparty, pursuant to which, at the Effective Time, each counterparty's right to purchase shares of DISH Network Class A Common Stock pursuant to the applicable warrant transactions was changed into a right to purchase shares of EchoStar Class A Common Stock, and we guaranteed all of DISH Network's obligations under the applicable warrant transactions.

In connection with the offering of the Convertible Notes due 2026, we entered into convertible note hedge transactions with certain option counterparties. The convertible note hedge transactions cover, subject to anti-dilution adjustments substantially similar to those applicable to the Convertible Notes due 2026, the number of shares of DISH Network Class A Common Stock underlying the Convertible Notes due 2026, which initially gives us the option to purchase approximately 46 million shares of DISH Network Class A Common Stock at a price of approximately $65.18 per share, which in connection with the completion of the Merger converted into approximately 16 million shares of EchoStar Class A Common Stock at a price of approximately $185.76 per share. The total cost of the original convertible note hedge transactions was $635 million.

Concurrently with entering into the convertible note hedge transactions, we also entered into warrant transactions with each option counterparty whereby we sold to such option counterparty warrants to purchase, subject to customary anti-dilution adjustments, up to the same number of shares of DISH Network Class A common stock, which initially gives the option counterparties the option to purchase approximately 46 million shares of DISH Network Class A common stock at a price of approximately $86.08 per share, which in connection with the completion of the Merger converted into approximately 16 million shares of EchoStar Class A Common Stock at price ranges of approximately $185.75 to $245.33 per share. We received $376 million in cash proceeds from the original sale of these warrants. In accordance with accounting guidance on hedge and warrant transactions, the net cost incurred in connection with the convertible note hedge and warrant transactions are recorded as a reduction in "Additional paid-in capital" within "Stockholders' Equity (Deficit)" on our Consolidated Balance Sheets as of December 31, 2016.

We will not be required to make any cash payments to each option counterparty or its affiliates upon the exercise of the options that are a part of the convertible note hedge transactions, but will be entitled to receive from them a number of shares of Class A common stock, an amount of cash or a combination thereof. This consideration is generally based on the amount by which the market price per share of Class A common stock, as measured under the terms of the convertible note hedge transactions, is greater than the strike price of the convertible note hedge transactions during the relevant valuation period under the convertible note hedge transactions. Additionally, if the market price per share of Class A common stock, as measured under the terms of the warrant transactions, exceeds the strike price of the warrants during the measurement period at the maturity of the warrants, we will owe each option counterparty a number of shares of Class A common stock in an amount based on the excess of such market price per share of Class A common stock over the strike price of the warrants. However, as specified under the terms of the warrant transactions, we may elect to settle the warrants in cash.

DISH DBS Senior Secured Notes

Our DISH DBS Senior Secured Notes are:

- general senior secured obligations of DISH DBS Corporation ("DISH DBS");
- secured by security interests in substantially all existing and future tangible and intangible assets of DISH DBS and its principal operating subsidiaries on a first priority basis, subject to certain exceptions;
- ranked equally in right of payment with all of DISH DBS' and the guarantors' existing and future senior debt;
- ranked senior in right of payment and effectively senior to any of DISH DBS' and the guarantors' junior lien or unsecured debt to the extent of the value of the pledged collateral that secures the Senior Secured Notes; and
- ranked effectively junior to DISH DBS' and the guarantors' obligations that are secured by assets that are not part of the pledged collateral that secures the Senior Secured Notes, to the extent of the value of such assets.

The indenture related to our DISH DBS Senior Secured Notes contain restrictive covenants that, among other things, impose limitations on the ability of DISH DBS and its restricted subsidiaries to:

- incur additional debt;
- pay dividends or make distributions on DISH DBS' capital stock or repurchase DISH DBS' capital stock;
- make certain investments;
- create liens or enter into sale and leaseback transactions;
- enter into transactions with affiliates;
- merge or consolidate with another company; and
- transfer or sell assets.

In the event of a change of control, as defined in the related indenture, we would be required to make an offer to repurchase all or any part of a holder's Senior Secured Notes at a purchase price equal to 101% of the aggregate principal amount thereof, together with accrued and unpaid interest thereon, to the date of repurchase.

5 1/4% Senior Secured Notes due 2026

On November 26, 2021, we issued $2.750 billion aggregate principal amount of our 5 1/4% Senior Secured Notes due December 1, 2026. Interest accrues at an annual rate of 5 1/4% and is payable semi-annually in cash, in arrears on June 1 and December 1 of each year, commencing on June 1, 2022.

The 5 1/4% Senior Secured Notes due 2026 are redeemable, in whole or in part, at any time prior to June 1, 2026 (the "2026 Par Call Date") at a redemption price equal to 100% of the principal amount plus a "make-whole" premium, as defined in the related indenture, together with accrued and unpaid interest. At any time on or after the 2026 Par Call Date, we may redeem the 5 1/4% Senior Secured Notes due 2026, in whole at any time or in part from time to time, at a price equal to 100% of the principal amount thereof, plus accrued and unpaid interest, if any, to the redemption date. Prior to December 1, 2024, we may also redeem up to 35% of the 5 1/4% Senior Secured Notes due 2026 at a specified premium with the net cash proceeds from certain equity offerings or capital contributions. At any time and from time to time during the 36-month period following the issue date of the 5 1/4% Senior Secured Notes due 2026, we may redeem up to 10% of the aggregate principal amount during each twelve-month period commencing with the issue date at a redemption price of 103% of the aggregate principal amount thereof plus accrued and unpaid interest, if any, to, but excluding, the redemption date.

5 3/4% Senior Secured Notes due 2028

On November 26, 2021, we issued $2.5 billion aggregate principal amount of our 5 3/4% Senior Secured Notes due December 1, 2028. Interest accrues at an annual rate of 5 3/4% and is payable semi-annually in cash, in arrears on June 1 and December 1 of each year, commencing on June 1, 2022.

The 5 3/4% Senior Secured Notes due 2028 are redeemable, in whole or in part, at any time prior to December 1, 2027 (the "2028 Par Call Date") at a redemption price equal to 100% of the principal amount plus a "make-whole" premium, as defined in the related indenture, together with accrued and unpaid interest. At any time on or after the 2028 Par Call Date, we may redeem the 5 3/4% Senior Secured Notes due 2028, in whole at any time or in part from time to time, at a price equal to 100% of the principal amount thereof, plus accrued and unpaid interest, if any, to the redemption date. Prior to December 1, 2024, we may also redeem up to 35% of the 5 3/4% Senior Secured Notes due 2028 at a specified premium with the net cash proceeds from certain equity offerings or capital contributions. At any time and from time to time during the 36-month period following the issue date of the 5 3/4% Senior Secured Notes due 2028, we may redeem up to 10% of the aggregate principal amount during each twelve-month period commencing with the issue date at a redemption price of 103% of the aggregate principal amount thereof plus accrued and unpaid interest, if any, to, but excluding, the redemption date.

Intercompany Loan

The net proceeds from the offering of our 5 1/4% Senior Secured Notes due 2026 and our 5 3/4% Senior Secured Notes due 2028 (the "Senior Notes") issued on November 26, 2021 were used by DISH DBS to make an intercompany loan to DISH Network pursuant to a Loan and Security Agreement dated November 26, 2021 (together with potential future advances to DISH Network, the "Intercompany Loan") between DISH DBS and DISH Network in order to finance the purchase of wireless spectrum licenses and for general corporate purposes, including our 5G Network Deployment. The Intercompany Loan will mature in two tranches, with the first tranche maturing on December 1, 2026 (the "2026 Tranche") and the second tranche maturing on December 1, 2028 (the "2028 Tranche"). DISH DBS may make additional advances to DISH Network under the Intercompany Loan, and on February 11, 2022, DISH DBS advanced an additional $1.5 billion to DISH Network under the Intercompany Loan 2026 Tranche. Interest accrues and is payable semiannually, and interest payments with respect to the Intercompany Loan are, at our option, payable in kind for the first two years. In the third year, a minimum of 50% of each interest payment due with respect to each tranche of the Intercompany Loan must be paid in cash. Thereafter, interest payments must be paid in cash. Interest will accrue: (a) when paid in cash, at a fixed rate of 0.25% per annum in excess of the interest rate applicable to, in the case of the 2026 Tranche, the 5 1/4% Senior Secured Notes due 2026, and in the case of the 2028 Tranche, the 5 3/4% Senior Secured Notes due 2028 (each, the "Cash Accrual Rate" with respect to the applicable tranche); and (b) when paid in kind, at a rate of 0.75% per annum in excess of the Cash Accrual Rate for the applicable tranche. As of December 31, 2023, the total Intercompany Loan amount outstanding plus interest paid in kind was $7.496 billion.

As of December 31, 2023, interest payments for the Intercompany Loan paid in cash totaled $105 million. In January 2024, the 2026 Tranche was assigned to EchoStar Intercompany Receivable Company L.L.C., our direct wholly-owned subsidiary, such that amounts owed in respect of the 2026 Tranche will now be paid by DISH Network to EchoStar Intercompany Receivable L.L.C. See Note 21 for further information.

The cash proceeds of the Intercompany Loan of $6.750 billion were paid to the FCC in connection with Weminuche's winning bids in Auction 110. As a result, the Intercompany Loan is secured by Weminuche's interest in the wireless spectrum licenses acquired in Auction 110 with such cash proceeds up to the total loan amount outstanding including interest paid in kind.

The remaining balance of our winning bids of approximately $455 million was paid from cash and marketable investment securities balances at that time, for a total of approximately $7.205 billion. Under certain circumstances, DISH Network wireless spectrum licenses (valued based upon a third-party valuation) may be substituted for the collateral. The Intercompany Loan is not included as collateral for the Senior Secured Notes, and the Senior Secured Notes are subordinated to DISH DBS's existing and certain future unsecured notes with respect to certain realizations under the Intercompany Loan and any collateral pledged as security for the Intercompany Loan.

DISH Network Senior Secured Notes

Our DISH Network Senior Secured Notes are:

- senior unsecured obligations and guaranteed by certain restricted subsidiaries on a senior secured basis and certain other material subsidiaries;
- secured on a first priority basis by security interests, in favor of the secured parties, in the collateral, which consists primarily of interests in wireless spectrum licenses within the 600 MHz band ("the Spectrum Collateral") owned by one of the secured guarantors and any additional subsidiaries of ours that may be added as guarantors from time to time and equity interests in the Spectrum Collateral guarantor(s) and DISH DBS;
- ranked equally in right of payment with all of our and the guarantor's existing and future senior indebtedness;
- ranked senior in right of payment to any of our and the guarantors' subordinated indebtedness and effectively senior to any of the Secured Guarantors unsecured indebtedness and indebtedness secured by junior liens on the collateral to the extent of the value of the collateral and effectively junior to all the existing and future obligations of any of our subsidiaries that are not Guarantors.
- ranked effectively junior to our obligations and the obligations of the guarantors that are secured by assets that do not constitute collateral to the extent of the value of such assets;

The indenture related to our DISH Network Senior Secured Notes contain restrictive covenants that, among other things, impose limitations on our ability and certain of our subsidiaries to:

- incur additional debt;
- pay dividends or make distributions on our capital stock or repurchase our capital stock;
- make certain investments of Spectrum Collateral;
- create liens or enter into sale and leaseback transactions;
- enter into transactions with affiliates;
- merge or consolidate with another company; and
- transfer or sell assets.

In the event of a change of control, as defined in the related indenture, we would be required to make an offer to repurchase all or any part of a holder's DISH Senior Secured Notes at a purchase price equal to 101% of the aggregate principal amount thereof, together with accrued and unpaid interest thereon, to the date of repurchase.

11 3/4% Senior Secured Notes due 2027

On November 15, 2022 and January 26, 2023, we issued $2.0 billion and $1.5 billion, respectively, aggregate principal amount of our 11 3/4% Senior Secured Notes due November 15, 2027. Interest accrues at an annual rate of 11 3/4% and is payable semi-annually in cash, in arrears on May 15 and November 15 of each year, commencing on May 15, 2023.

The 11 3/4% Senior Secured Notes due 2027 are redeemable, in whole or in part, at any time prior to May 15, 2025 at a redemption price equal to 100% of their principal amount plus a "make-whole" premium, as defined in the related indenture, together with accrued and unpaid interest. At any time on or after May 15, 2025, we may redeem the 11 3/4% Senior Secured Notes due 2027, in whole at any time or in part from time to time, at the redemption prices specified in the related indenture, together with accrued and unpaid interest, if any, to the redemption date.

Prior to May 15, 2025, we may also redeem up to 40% of the 11 3/4% Senior Secured Notes due 2027 at a redemption price equal to 111.750% of the aggregate principal amount of the 11 3/4% Senior Secured Notes due 2027 redeemed, together with accrued and unpaid interest to such redemption date, with the net cash proceeds from certain equity offerings or capital contributions.

Pursuant to the related indenture, we are required to obtain an initial appraisal of the Spectrum Collateral by an independent appraiser (the "Initial Appraisal") within 120 days following the issue date of the 11 3/4% Senior Secured Notes due 2027. As of January 17, 2023, the Initial Appraisal certified we had satisfied the requirements under the loan-to-value ratio (as defined in the Indenture). Based on the independent appraisal, the loan-to-value ratio was not greater than 0.35 to 1.00 and the fair market value of the Spectrum Collateral was $10.04 billion. We will also be required to obtain a second appraisal of the Spectrum Collateral (a "Second Appraisal") within 120 days of the date if wireless spectrum licenses that form part of the Spectrum Collateral accounting for more than 10% of the aggregate MHz-POPs of all such licenses constituting the Spectrum Collateral are forfeited to the Federal Communications Commission as a result of our failure to meet its buildout milestones with respect to such forfeited licenses. If we fail to deliver the Initial Appraisal or a Second Appraisal, as applicable, within 120 days following the issue date of the 11 3/4% Senior Secured Notes due 2027 or the date of forfeiture, respectively, then we will be required to redeem all of the 11 3/4% Senior Secured Notes due 2027 at a redemption price equal to 102% of their principal amount, plus accrued and unpaid interest to, but excluding, the redemption date.

If the loan-to-value ratio with respect to the Spectrum Collateral as of the date of the Initial Appraisal or the Second Appraisal, as applicable, is greater than 0.35 to 1.00, then within 60 days following the date of the delivery of the Initial Appraisal, or within 90 days following the date of the delivery of the Second Appraisal, as applicable, we will be required to add additional Spectrum Collateral guarantors and/or pledge (or cause to be pledged) cash or interests in additional wireless spectrum licenses as Spectrum Collateral to comply with the required loan-to-value ratio of 0.35 to 1.00. If we fail to add such additional Spectrum Collateral and/or pledge (or cause to be pledged) cash or interests in additional wireless spectrum licenses, we will be required to redeem an amount of 11 3/4% Senior Secured Notes due 2027 such that immediately after giving effect to such redemption, the loan-to-value ratio shall not be greater than 0.35 to 1.00 at a redemption price equal to 102% of their principal amount, plus accrued and unpaid interest to, but excluding, the redemption date.

HSSC Secured Senior Notes

5 1/4% Senior Secured Notes due 2026

On July 27, 2016, our subsidiary Hughes Satellite Systems Corporation ("HSSC") issued $750.0 million aggregate principal amount of 5 1/4% Senior Secured Notes due 2026 (the "2026 Senior Secured Notes") at an issue price of 100.0%, pursuant to an indenture dated July 27, 2016 (the "2016 Secured Indenture"). The 2026 Senior Secured Notes mature on August 1, 2026. Interest on the 2026 Senior Secured Notes accrues at an annual rate of 5 1/4% and is payable semi-annually in cash, in arrears, on February 1 and August 1 of each year.
Our Senior Notes due 2026 are:

- secured obligations of HSSC;
- secured by security interests in substantially all existing and future tangible and intangible assets of HSSC and certain of its subsidiaries on a first priority basis, subject to certain exceptions;
- effectively junior to HSSC's obligations that are secured by assets that are not part of the collateral that secures the 2026 Senior Secured Notes to the extent of the value of the collateral securing such obligations;
- effectively senior to HSSC's existing and future unsecured obligations to the extent of the value of the collateral securing the 2026 Senior Secured Notes, after giving effect to permitted liens as provided in the 2016 Secured Indenture;
- senior in right of payment to all existing and future obligations of HSSC that are expressly subordinated to the 2026 Senior Secured Notes;

- structurally junior to any existing and future obligations of any of HSSC's subsidiaries that do not guarantee the 2026 Senior Secured Notes; and
- unconditionally guaranteed, jointly and severally, on a general senior secured basis by certain of our HSSC's subsidiaries, which guarantees rank equally with all of the guarantors' existing and future unsubordinated indebtedness and effectively senior to such guarantors' existing and future obligations to the extent of the value of the assets securing the 2026 Senior Secured Notes.

Subject to certain exceptions, the Indentures contain restrictive covenants that, among other things, impose limitations on HSSC's ability and, in certain instances, the ability of certain of HSSC's subsidiaries to:

- incur additional debt;
- pay dividends or make distributions on HSSC's or their capital stock or repurchase HSSC's or their capital stock;
- make certain investments;
- create liens or enter into sale and leaseback transactions;
- enter into transactions with affiliates;
- merge or consolidate with another company;
- transfer and sell assets; and
- allow to exist certain restrictions on its or their ability to pay dividends, make distributions, make other payments, or transfer assets.

In the event of a Change of Control, as defined in the respective Indentures, HSSC would be required to make an offer to repurchase all or any part of a holder's 2026 Senior Secured Notes at a purchase price equal to 101.0% of the aggregate principal amount thereof, together with accrued and unpaid interest to the date of repurchase.
The Indentures provide for customary events of default for each series of the 2026 Senior Secured Notes, including, among other things, non-payment, breach of the covenants in the applicable Indentures, payment defaults or acceleration of other indebtedness, a failure to pay certain judgments and certain events of bankruptcy, insolvency and reorganization. If any event of default occurs and is continuing with respect to any series of the 2026 Senior Secured Notes, the trustee or the holders of at least 25.0% in principal amount of the then outstanding 2026 Senior Secured Notes of such series may declare all the 2026 Senior Secured Notes of such series to be due and payable immediately, together with any accrued and unpaid interest.

Interest on Long-Term Debt

	Issuer	Semi-Annual Payment Dates		Annual Debt Service Requirements
				(In thousands)
2 3/8% Convertible Notes due 2024 (1)	DISH	March 15 and September 15	$	23,750
5 7/8% Senior Notes due 2024 (2)	DDBS	May 15 and November 15	$	117,500
7 3/4% Senior Notes due 2026	DDBS	January 1 and July 1	$	155,000
5 1/4% Senior Secured Notes due 2026	HSSC	February 1 and August 1	$	39,375
6 5/8% Senior Notes due 2026	HSSC	February 1 and August 1	$	49,688
3 3/8% Convertible Notes due 2026	DISH	February 15 and August 15	$	101,250
5 1/4% Senior Secured Notes due 2026	DDBS	June 1 and December 1	$	144,375
11 3/4% Senior Secured Notes due 2027	DISH	May 15 and November 15	$	411,250
7 3/8% Senior Notes due 2028	DDBS	January 1 and July 1	$	73,750
5 3/4% Senior Secured Notes due 2028	DDBS	June 1 and December 1	$	143,750
5 1/8% Senior Notes due 2029	DDBS	June 1 and December 1	$	76,875

(1) Our 2 3/8% Convertible Notes due 2024 mature on March 15, 2024 and have been reclassified to "Current portion of long-term debt and finance lease obligations" on our Consolidated Balance Sheets as of December 31, 2023. As of the year ended December 31, 2023, there is only one remaining interest payment due on March 15, 2024.

(2) Our 5 7/8% Senior Notes due 2024 mature on November 15, 2024 and have been reclassified to "Current portion of long-term debt and finance lease obligations" on our Consolidated Balance Sheets as of December 31, 2023.

Materially all of our interest expense is being capitalized, including the interest expense associated with the amortization of the debt discounts on our Convertible Notes. See Note 2 for further information.

Our ability to meet our debt service requirements will depend on, among other factors, the successful execution of our business strategy, which is subject to uncertainties and contingencies beyond our control.

Other Long-Term Debt and Finance Lease Obligations

Other long-term debt and finance lease obligations consisted of the following:

	As of December 31,	
	2023	2022
	(In thousands)	
Satellites and other finance lease obligations	$ 123,658	$ 123,353
Notes payable related to satellite vendor financing and other debt payable in installments through 2032 with interest rates ranging from approximately 0% to 11.4%	160,158	188,509
Total	283,816	311,862
Less: current portion	(112,942)	(109,380)
Other long-term debt and finance lease obligations, net of current portion	$ 170,874	$ 202,482

Finance Lease Obligations

Anik F3. Anik F3, an FSS satellite, was launched and commenced commercial operation in April 2007. This satellite was previously accounted for as a finance lease and depreciated over the term of the satellite service agreement. We leased 100% of the Ku-band capacity on Anik F3 for an initial period of 15 years. During April 2022, we extended the Anik F3 lease and as a result it is currently accounted for as an operating lease.

Nimiq 5. On May 19, 2019, we entered into a Master Transaction Agreement pursuant to which, on September 10, 2019, the satellite service agreement for Nimiq 5 was transferred to us. Nimiq 5 was launched in September 2009 and commenced commercial operation at the 72.7 degree west longitude orbital location during October 2009. This satellite is accounted for as a finance lease and depreciated over the term of the satellite service agreement. We lease 100% of the capacity on Nimiq 5, and this lease expires in September 2024.

Ciel II. Ciel II, a Canadian DBS satellite, was launched in December 2008 and commenced commercial operation in February 2009. This satellite was previously accounted for as a finance lease and depreciated over the term of the satellite service agreement, however, as a result of an amendment, which was effective during the first quarter 2019, Ciel II is now accounted for as an operating lease. We lease 100% of the capacity on Ciel II. The initial ten-year term expired in January 2019 and as a result of an amendment, we renewed this lease through July 2023. As of July 2023, we no longer lease the Ciel II satellite.

Dell Finance Lease. On July 17, 2020, we entered into a master agreement with Dell to lease certain components of our 5G Network Deployment infrastructure, including certain equipment.

The summary of future maturities of our outstanding long-term debt as of December 31, 2023 is included in the commitments table in Note 15.

11. Income Taxes and Accounting for Uncertainty in Income Taxes

Income Taxes

Our income tax policy is to record the estimated future tax effects of temporary differences between the tax bases of assets and liabilities and amounts reported on our Consolidated Balance Sheets, as well as probable operating loss, tax credit and other carryforwards. Deferred tax assets are offset by valuation allowances when we believe it is more likely than not that net deferred tax assets will not be realized. We periodically evaluate our need for a valuation allowance. Determining necessary valuation allowances requires us to make assessments about historical financial information as well as the timing of future events, including the probability of expected future taxable income and available tax planning opportunities.

We file consolidated tax returns in the United States. The income taxes of domestic and foreign subsidiaries not included in the United States tax group are presented in our consolidated financial statements on a separate return basis for each tax paying entity.

As of December 31, 2023, we had $267 million net operating loss carryforwards ("NOLs") for federal income tax purposes, $292 million of NOL carryforwards for state income tax purposes and $219 million of foreign NOL carryfowards which are partially offset by a valuation allowance. In addition, there are $287 million of tax benefits related to credit carryforwards which are partially offset by a valuation allowance. Portions of the state NOL and credit carryforwards expired in 2023.

The components of the (benefit from) provision for income taxes were as follows:

	For the Years Ended December 31,		
	2023	2022	2021
		(In thousands)	
Current (benefit) provision:			
Federal	$ (7,484)	$ (1,283)	$ 135,759
State	39,441	70,707	47,115
Foreign	8,405	(601)	5,855
Total current (benefit) provision	40,362	68,823	188,729
Deferred (benefit) provision:			
Federal	(308,917)	638,077	538,979
State	(150,108)	93,755	87,319
Foreign	(45,006)	(20,965)	(34,809)
Increase (decrease) in valuation allowance	166,809	18,720	48,219
Total deferred (benefit) provision	(337,222)	729,587	639,708
Total (benefit) provision	$ (296,860)	$ 798,410	$ 828,437

Our $1.932 billion loss of "Income (loss) before income taxes" on our Consolidated Statements of Operations and Comprehensive Income (Loss) included a loss of $172 million related to our foreign operations.

The following table shows the principal reasons for the difference between the effective income tax rate and the statutory federal tax rate:

	For the Years Ended December 31,		
	2023	2022	2021
		% of pre-tax income/(loss)	
Statutory rate	(21.0)	21.0	21.0
State income taxes, net of federal benefit	(3.6)	3.3	3.2
Rates different than statutory	(1.1)	(0.5)	(0.5)
Increase (decrease) in valuation allowance	8.6	0.6	1.4
Tax credits	(3.8)	(0.8)	(0.5)
Impairments	6.0	—	—
Other, net	(0.5)	0.3	0.1
Total (benefit) provision for income taxes	(15.4)	23.9	24.7

Deferred taxes arise because of the differences in the book and tax bases of certain assets and liabilities. Significant components of deferred tax assets and liabilities were as follows:

	As of December 31,	
	2023	2022
	(In thousands)	
Deferred tax assets:		
NOL, interest, credit and other carryforwards	$ 1,322,706	$ 666,789
Accrued and prepaid expenses	966,445	759,981
Stock-based compensation	29,387	29,383
Unrealized (gains) losses on available for sale and other investments (1)	222,769	—
Discount on convertible notes and convertible note hedge transaction, net	46,636	64,644
Deferred revenue	10,748	5,681
Other	10,096	11,050
Total deferred tax assets	2,608,787	1,537,528
Valuation allowance	(492,340)	(306,703)
Deferred tax asset after valuation allowance	2,116,447	1,230,825
Deferred tax liabilities:		
Depreciation	(1,961,227)	(1,784,018)
Unrealized (gains) losses on available for sale and other investments (1)	—	(241,297)
Regulatory authorizations and other intangible amortization	(3,960,608)	(3,491,625)
Bases differences in partnerships and cost method investments (2)	(1,179,418)	(1,041,790)
Other liabilities	(21,227)	(18,840)
Total deferred tax liabilities	(7,122,480)	(6,577,570)
Net deferred tax asset (liability) (3)	$ (5,006,033)	$ (5,346,745)

(1) Included in this line item are deferred taxes related to, among other things, changes in the probability weighted fair value of our option to purchase certain of T-Mobile’s 800 MHz spectrum licenses. See Note 6 for further information.
(2) Included in this line item are deferred taxes related to, among other things, our noncontrolling investments in Northstar Spectrum and SNR HoldCo, including deferred taxes created by the tax amortization of the Northstar Licenses and SNR Licenses. See Note 2 for further information.
(3) The presentation of net deferred tax liability includes both deferred tax liabilities and deferred tax assets. Certain foreign deferred tax assets are presented as part of “Other noncurrent assets, net” on our Consolidated Balance Sheets and our deferred tax liabilities related to all other jurisdictions are reported separately as “Deferred tax liabilities, net” on our Consolidated Balance Sheets.

As of December 31, 2023, we had undistributed earnings attributable to foreign subsidiaries for which no provision for U.S. income taxes or foreign withholding taxes has been made because it is expected that such earnings will be reinvested outside the U.S. indefinitely. It is not practicable to determine the amount of the unrecognized deferred tax liability at this time.

Accounting for Uncertainty in Income Taxes

In addition to filing federal income tax returns, we and one or more of our subsidiaries file income tax returns in all states that impose an income tax. We are subject to United States federal, state and local income tax examinations by tax authorities for the years as early as tax year 2008. We are currently under a federal income tax examination for years 2008 through 2011, 2013 through 2016, and 2018 through 2019. We also file income tax returns in the United Kingdom, Germany, Brazil, India and a number of other foreign jurisdictions. We generally are open to income tax examination in these foreign jurisdictions for taxable years beginning in 2004.

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A reconciliation of the beginning and ending amount of unrecognized tax benefits included in "Long-term deferred revenue and other long-term liabilities" on our Consolidated Balance Sheets was as follows:

Unrecognized tax benefit	For the Years Ended December 31, 2023	2022	2021
		(In thousands)	
Balance as of beginning of period	$ 569,601	$ 539,113	$ 528,527
Additions based on tax positions related to the current year	9,210	36,587	496
Additions based on tax positions related to prior years	41,522	16,369	12,200
Reductions based on tax positions related to prior years	(7,219)	(21,541)	(1,482)
Reductions based on tax positions related to settlements with taxing authorities	(3,219)	—	—
Reductions based on tax positions related to the lapse of the statute of limitations	(352)	(927)	(628)
Balance as of end of period	$ 609,543	$ 569,601	$ 539,113

We have $539 million in unrecognized tax benefits that, if recognized, could favorably affect our effective tax rate. We do not expect any material portion of this amount to be paid or settled within the next 12 months. Accrued interest and penalties on uncertain tax positions are recorded as a component of "Interest expense, net of amounts capitalized" and "Other, net," respectively, on our Consolidated Statements of Operations and Comprehensive Income (Loss). During the years ended December 31, 2023, 2022 and 2021, we recorded $39 million, $22 million and $16 million in net interest and penalty expense to earnings, respectively. Accrued interest and penalties were $165 million and $126 million at December 31, 2023 and 2022, respectively. The above table excludes these amounts.

12. Stockholders' Equity (Deficit)

Capital Stock

Merger with DISH Network

At the Effective Time of the Merger, (1) each share of DISH Network Class A Common Stock issued and outstanding immediately prior to the Effective Time, other than shares held directly by DISH Network as treasury shares or held by EchoStar or Merger Sub, was converted automatically into 0.350877 shares of EchoStar Class A Common Stock, and (2) each share of DISH Network Class B Common Stock issued and outstanding immediately prior to the Effective Time, other than shares held directly by DISH Network as treasury shares or held by EchoStar or Merger Sub, was converted automatically into 0.350877 shares of EchoStar Class B Common Stock, resulting in the issuance of 104 million shares of EchoStar Class A Common Stock, which includes 23 million shares of treasury stock that were reissued, and 84 million shares of EchoStar Class B Common Stock. At the Effective Time, each share of EchoStar Class A Common Stock outstanding and each share of EchoStar Class B Common Stock issued and outstanding immediately prior to the Effective Time, remained an outstanding share of EchoStar Class A Common Stock and an issued and outstanding share of EchoStar Class B Common Stock, respectively, and was not affected by the Merger. At the Effective Time, each share of EchoStar Class A Common Stock held directly by EchoStar as treasury shares immediately prior to the Effective Time, were reissued as part of the Merger.

Our certificate of incorporation authorizes the following capital stock: (i) 1,600,000,000 shares of Class A common stock, par value $0.001 per share; (ii) 800,000,000 shares of Class B common stock, par value $0.001 per share; (iii) 800,000,000 shares of Class C common stock, par value $0.001 per share; (iv) 800,000,000 shares of Class D common stock, par value $0.001 per share; and (v) 20,000,000 shares of preferred stock, par value $0.001 per share. As of December 31, 2023 and 2022, there were no outstanding shares of Class C common stock, Class D common stock or preferred stock.

Our Board of Directors is authorized to issue preferred stock and may divide such preferred stock into series and, with respect to each series, to determine the preferences and rights and the qualifications, limitations or restrictions of the series, including, but not limited to, the dividend rights, conversion rights, voting rights, redemption rights and terms, liquidation preferences, sinking fund provisions, the number of shares constituting the series and the designation of such series.

Our Board of Directors may, without stockholder approval, issue additional preferred stock of existing or new series with voting and other rights that could adversely affect the voting power of the holders of common stock and could have certain anti-takeover effects.

Our Class A, Class B, and Class C common stock are equivalent except for voting rights. Holders of Class A and Class C common stock are entitled to one vote per share and holders of Class B common stock are entitled to 10 votes per share. Each share of Class B and Class C common stock is convertible, at the option of the holder, into one share of Class A common stock. Our Class A common stock is publicly traded on the Nasdaq Global Select Market under the symbol “SATS.” Upon a change in control of EchoStar, each holder of outstanding shares of Class C common stock is entitled to 10 votes for each share of Class C common stock held. Charles W. Ergen, our Chairman, and certain entities established for the benefit of his family beneficially own all outstanding Class B common stock. Our principal stockholder and certain entities established by him for the benefit of his family beneficially own all outstanding Class B common stock. Together with all other stockholders, he also owns outstanding Class A common stock. There are no shares of Class C common stock outstanding.

Any holder of Class D common stock is not entitled to a vote on any matter or to convert the shares of Class D common stock into any other class of common stock.

Each share of common stock is entitled to receive its pro rata share, based upon the number of shares of common stock held, of dividends and distributions upon liquidation.

Common Stock Repurchase Program

Our Board of Directors previously authorized stock repurchases of up to $500 million of our outstanding Class A common stock. On October 20, 2022, our Board of Directors extended this authorization to repurchase up to $500 million of our outstanding Class A common stock through and including December 31, 2023. This program expired December 31, 2023. During the year ended December 31, 2023 there were no repurchases of our Class A common stock.

13. Employee Benefit Plans

Employee Stock Purchase Plan

Our employees may participate in the EchoStar employee stock purchase plan (the “ESPP”), in which we are authorized to issue up to 5.0 million shares of Class A common stock. At December 31, 2023, we had 0.5 million shares of Class A common stock which remain available for issuance under the ESPP. Substantially all full-time employees who have been employed by us for at least one calendar quarter are eligible to participate in the ESPP. Employee stock purchases are made through payroll deductions. Under the terms of the ESPP, employees may not deduct an amount which would permit such employee to purchase our capital stock under all of our stock purchase plans at a rate which would exceed $25,000 in fair value of capital stock in any one year. The purchase price of the stock is 85% of the closing price of the Class A common stock on the last business day of each calendar quarter in which such shares of Class A common stock are deemed sold to an employee under the ESPP.

401(k) Employee Savings Plans

We sponsor the DISH Network 401(k) Employee Savings Plan (the “DISH Network 401(k) Plan”) and the EchoStar 401(k) Employee Savings Plan (the “EchoStar 401(k) Plan”) (collectively referred to as the “401(k) Plans”) for eligible employees. Voluntary employee contributions to the 401(k) Plans may be matched 50% by us and under the EchoStar 401(k) Plan, subject to a maximum annual contribution of $7,500 per employee participating in the EchoStar 401(k) Plan and $2,500 per employee participating in the DISH Network 401(k) Plan. Forfeitures of unvested participant balances which are retained by the 401(k) Plans may be used to fund matching and discretionary contributions. Our Board of Directors may also authorize an annual discretionary contribution to the 401(k) plans, subject to the maximum deductible limit provided by the Internal Revenue Code of 1986, as amended. These contributions may be made in cash or in our stock.

The following table summarizes the expense associated with our matching contributions and discretionary contributions:

Expense Recognized Related to the 401(k) Plan	For the Years Ended December 31, 2023	2022	2021
		(In thousands)	
Matching contributions, net of forfeitures	$ 20,379	$ 18,275	$ 14,346
Discretionary stock contributions, net of forfeitures	$ 5,491	$ 21,606	$ 33,507

14. Stock-Based Compensation

Merger with DISH Network

Upon the completion of the Merger with DISH Network, we adopted all of DISH Network's stock compensation plans. In addition, in connection with the Merger, EchoStar assumed the share reserve under each of the DISH Network Corporation 2019 Stock Incentive Plan and the Amended and Restated DISH Network Corporation 2001 Nonemployee Director Stock Option Plan to employees and directors who were employed by, or provided services to, DISH Network immediately prior to the effective time of the Merger.

At the Effective Time, each DISH Network stock option outstanding immediately prior to the Effective Time was converted automatically into an EchoStar stock option on substantially the same terms and conditions (including, if applicable, with respect to any performance-based vesting, subject to certain adjustments that may be made pursuant to the terms of the Amended Merger Agreement and to the extent necessary to reflect the consummation of the Merger and the other transactions contemplated by the Amended Merger Agreement), with respect to a number of shares of EchoStar Class A Common Stock equal to (i) the number of shares of DISH Network Common Stock subject to the corresponding DISH Network stock option immediately prior to the Effective Time, multiplied by (ii) the Exchange Ratio (with the resulting number rounded down to the nearest whole share), at an exercise price (rounded up to the nearest whole cent) equal to the exercise price of the corresponding DISH Network stock option immediately prior to the Effective Time divided by the Exchange Ratio.

At the Effective Time, each DISH Network restricted stock unit award outstanding immediately prior to the Effective Time was converted automatically into an EchoStar restricted stock unit award on substantially the same terms and conditions, with respect to a number of shares of EchoStar Class A Common Stock equal to (i) the number of shares of DISH Network Common Stock subject to the corresponding DISH Network restricted stock unit award immediately prior to the Effective Time, multiplied by (ii) the Exchange Ratio (with the resulting number rounded to the nearest whole share).

Stock Incentive Plans

All information below includes the Merger conversion discussed above.

We maintain stock incentive plans to attract and retain officers, directors and key employees. Stock awards under these plans include both performance/market and non-performance based stock incentives. As of December 31, 2023, we had outstanding under these plans stock options to acquire 16.1 million shares of our Class A common stock and 49 thousand restricted stock units and awards. Stock options granted on or prior to December 31, 2023 were granted with exercise prices equal to or greater than the market value of our Class A common stock at the date of grant and with a maximum term of approximately ten years. We account for forfeitures as they are incurred. While historically we have issued stock awards subject to vesting, typically at the rate of 20% per year, certain stock awards have been granted with immediate vesting and certain other stock awards vest only upon the achievement of certain company-specific subscriber, operational and/or financial goals. In addition, the Ergen 2020 Performance Award is subject to the achievement of specified stock price targets. As of December 31, 2023, we had 3.4 million shares of our Class A common stock available for future grant under the EchoStar stock incentive plans. As of December 31, 2023, we had 17.2 million shares of our Class A common stock available for future grant under the DISH Network stock incentive plans.

Exchange offer. On June 24, 2022, we commenced a tender offer to eligible employees (which excludes our co-founders and the independent members of our Board of Directors) to exchange eligible stock options (which excludes the Ergen 2020 Performance Award) for new options as detailed in our Schedule TO filed June 23, 2022 with the Securities and Exchange Commission (the "Exchange Offer"), to, among other things, further align employee incentives with the current market. The Exchange Offer expired on July 22, 2022. As a result of the Exchange Offer, the exercise price of approximately 13 million stock options, affecting approximately 700 eligible employees, was adjusted during the third quarter of 2022 to $20.00.

Stock Award Activity

Our stock option activity was as follows:

	For the Year Ended December 31, 2023			
	Options	**Weighted-Average Exercise Price**	**Aggregate intrinsic value (in thousands)**	**Weighted-Average Remaining Contractual Life**
Total options outstanding, beginning of period	16,887,454	$ 59.28		
Granted	1,653,280	$ 22.28		
Exercised	—	$ —		
Forfeited and cancelled (1)	(2,453,588)	$ 59.25		
Total options outstanding, end of period	16,087,146	$ 55.48	$ 1	6.76
Performance/market based options outstanding, end of period (2)	4,631,083	$ 84.20		
Exercisable at end of period	6,332,074	$ 50.88	$ —	5.35

(1) Includes the cancellation of the 2013 LTIP. See discussion below.
(2) These stock options are included in the caption "Total options outstanding, end of period." See discussion of the 2017 LTIP, 2019 LTIP, 2022 Incentive Plan, Ergen 2020 Performance Award and Other Employee Performance Awards below.

We realized tax benefits from stock awards exercised as follows:

	For the Years Ended December 31,		
	2023	**2022**	**2021**
		(In thousands)	
Tax benefit from stock awards exercised	$ 1,384	573	4,457

Our restricted stock unit and award activity was as follows:

	For the Year Ended December 31, 2023	
	Restricted Stock Units/Awards	Weighted-Average Grant Date Fair Value
Total restricted stock units/awards outstanding, beginning of period	802,804	$ 72.70
Granted	5,776	$ 17.50
Vested	(525,100)	$ 60.89
Forfeited and cancelled	(234,835)	$ 92.34
Total restricted stock units/awards outstanding, end of period	48,645	$ 98.78

The following table summarizes additional information about our stock options and restricted stock units and awards:

	For the Years Ended December 31,		
	2023	2022	2021
	(In thousands, except per share amounts)		
Stock options:			
Weighted-average grant date fair value of options granted	$ 22.28	$ 53.20	$ 84.84
Intrinsic value of options exercised (1)	$ —	$ 98	$ 16,029
Restricted stock units and awards:			
Weighted-average grant date fair value of units and awards granted	$ 17.50	$ 40.06	$ 120.86
Fair value of units and rewards vested (1)	$ 9,926	$ 2,212	$ 1,218

(1) Intrinsic value and fair value is based on the closing market price of our Class A common stock on December 31, 2023.

Long-Term Performance-Based Plans

2013 LTIP. During 2013, we adopted a long-term, performance-based stock incentive plan (the “2013 LTIP”). The 2013 LTIP provides stock options and restricted stock units in combination, which vest based on certain company-specific subscriber and financial performance conditions. Exercise of the stock awards is contingent on achieving these performance conditions by September 30, 2022. This plan expired on January 1, 2023 which resulted in the cancellation of 276,147 stock options and 137,449 restricted stock units and awards.

2017 LTIP. On December 2, 2016, we adopted a long-term, performance-based stock incentive plan (the “2017 LTIP”). The 2017 LTIP provided stock options, which were subject to vesting based on certain company-specific subscriber and financial performance conditions. Awards were initially granted under the 2017 LTIP as of January 1, 2017. Exercise of the stock awards was contingent on achieving these performance conditions by December 31, 2020, however, none of the performance conditions were achieved. This plan will expire on January 1, 2027 which as of December 31, 2023, would result in the cancellation of 471,727 stock options.

2019 LTIP. On August 17, 2018, we adopted a long-term, performance-based stock incentive plan (the “2019 LTIP”). The 2019 LTIP provides stock options, which vest based on certain company-specific subscriber, operational and/or financial performance conditions. Vesting of the stock awards is contingent on achieving these conditions by December 31, 2023.

Although no awards vest until the Company attains the performance conditions described above, compensation related to the 2019 LTIP will be recorded based on management's assessment of the probability of meeting the performance conditions. If the performance conditions are probable of being achieved, we will begin recognizing the associated non-cash, stock-based compensation expense on our Consolidated Statements of Operations and Comprehensive Income (Loss) over the estimated period to achieve the performance condition.

During the years ended December 31, 2023, 2022 and 2021, we determined that 85%, 89% and 90%, respectively, of the 2019 LTIP performance conditions were probable of achievement. As a result, non-cash, stock-based compensation expense was recorded for the years ended December 31, 2023, 2022 and 2021, as indicated in the table below titled "Non-Cash, Stock-Based Compensation Expense Recognized." As of December 31, 2023, 2022 and 2021, approximately 78%, 75% and 69%, respectively, of the 2019 LTIP awards had vested. No additional awards will vest in future periods for the 2019 LTIP.

2022 Incentive Plan. On December 30, 2021, we adopted a performance-based incentive plan (the "2022 Incentive Plan"). The 2022 Incentive Plan provides stock options, which vest based on certain company-specific operational and/or financial performance conditions. Awards were initially granted under the 2022 Incentive Plan as of February 1, 2022. Exercise of the stock awards is contingent on achieving these conditions by December 31, 2026.

Although no awards vest until the Company attains the performance conditions described above, compensation related to the 2022 Incentive Plan will be recorded based on management's assessment of the probability of meeting the performance conditions. If the performance conditions are probable of being achieved, we will begin recognizing the associated non-cash, stock-based compensation expense on our Consolidated Statements of Operations and Comprehensive Income (Loss) over the estimated period to achieve the performance condition.

During the year ended December 31, 2023, we determined that 100% of the 2022 Incentive Plan performance conditions were probable of achievement. As a result, non-cash, stock-based compensation expense was recorded for the years ended December 31, 2023 as indicated in the table below titled "Non-Cash, Stock-Based Compensation Expense Recognized." As of December 31, 2023 and 2022, approximately 17% and 33%, respectively, of the 2022 Incentive Plan awards had vested.

Ergen 2020 Performance Award. On November 4, 2020, our Executive Compensation Committee of the Board of Directors approved an award to Charles W. Ergen, our Chairman, of long-term performance-based options (the "Ergen 2020 Performance Award") to purchase up to 4,385,962 shares of EchoStar's Class A common stock. The award is subject to the achievement of specified EchoStar Class A common stock price targets during the approximate ten-year period following the date of grant. The award was granted on November 6, 2020 and will expire on February 6, 2031.

Although no awards will vest until the market conditions are satisfied, as of December 31, 2020, we began recording non-cash, stock-based compensation expense for each vesting tranche based on the estimated achievement date of the specified stock price target. The valuation and probability of achievement for each tranche is determined using a Monte Carlo simulation. The same Monte Carlo simulation is used as the basis for determining the expected achievement date. As the probability of achievement is factored in as part of the Monte Carlo simulation, the expense for these tranches will be recognized concurrently over each tranche's estimated achievement date even if some or all of the options never vest. If the related milestone for a tranche is achieved earlier than is expected, all unamortized expense for such tranche will be recognized immediately. Non-cash, stock-based compensation expense was recorded for the years ended December 31, 2023, 2022 and 2021, as indicated in the table below titled "Non-Cash, Stock-Based Compensation Expense Recognized." As of December 31, 2023, 2022 and 2021, approximately 20% of the Ergen 2020 Performance Award awards had vested.

Other Employee Performance Awards. In addition to the above long-term, performance stock incentive plans, we have other stock awards that vest based on certain other company-specific subscriber, operational and/or financial performance conditions. Exercise of these stock awards is contingent on achieving certain performance conditions.

Additional compensation related to these awards will be recorded based on management's assessment of the probability of meeting the remaining performance conditions. If the remaining performance conditions are probable of being achieved, we will begin recognizing the associated non-cash, stock-based compensation expense on our Consolidated Statements of Operations and Comprehensive Income (Loss) over the estimated period to achieve the performance condition. See the table below titled "Estimated Remaining Non-Cash, Stock-Based Compensation Expense."

Although no awards vest until the performance conditions are attained, we determined that certain performance conditions described above were probable of achievement and, as a result, recorded non-cash, stock-based compensation expense for the years ended December 31, 2023, 2022 and 2021, as indicated in the table below titled "Non-Cash, Stock-Based Compensation Expense Recognized."

The non-cash, stock-based compensation expense associated with these awards was as follows:

	For the Years Ended December 31,		
Non-Cash, Stock-Based Compensation Expense Recognized (1)	**2023**	**2022**	**2021**
		(In thousands)	
2022 Incentive Plan	$ 7,346	$ 19,088	$ —
2019 LTIP	(1,903)	(97)	489
2013 LTIP	—	—	(13,610)
Ergen 2020 Performance Award	12,308	12,308	34,513
Other employee performance awards	462	4,502	9,033
Total non-cash, stock-based compensation expense recognized for performance based awards	$ 18,213	$ 35,801	$ 30,425

(1) "Non-Cash, Stock-Based Compensation Expense Recognized" includes actual forfeitures.

Estimated Remaining Non-Cash, Stock-Based Compensation Expense	**2022 Incentive Plan**	**2019 LTIP**	**Ergen 2020 Performance Award**	**Other Employee Performance Awards**
		(In thousands)		
Expense estimated to be recognized during 2024	$ 2,119	$ —	$ 10,816	$ —
Estimated contingent expense subsequent to 2024	1,114	—	16,913	—
Total estimated remaining expense over the term of the plan	$ 3,233	$ —	$ 27,729	$ —

Given the competitive nature of our business, small variations in subscriber churn, gross new subscriber activation rates and certain other factors can significantly impact subscriber growth. Consequently, while it was determined that achievement of certain other company-specific subscriber, operational and/or financial performance conditions were not probable as of December 31, 2023, that assessment could change in the future.

Of the 16.1 million stock options and 49 thousand restricted stock units and awards outstanding under our stock incentive plans as of December 31, 2023, the following awards were outstanding pursuant to our performance-based stock incentive plans:

	As of December 31, 2023	
Performance Based Stock Options	**Number of Awards**	**Weighted-Average Grant Price**
2022 Incentive Plan	401,828	$ 50.78
2019 LTIP	248,758	$ 60.04
2017 LTIP	471,727	$ 164.20
Ergen 2020 Performance Award	3,508,770	$ 78.98
Total	4,631,083	$ 84.20

Stock-Based Compensation

Total non-cash, stock-based compensation expense for all of our employees is shown in the following table for the years ended December 31, 2023, 2022 and 2021 and was allocated to the same expense categories as the base compensation for such employees:

	For the Years Ended December 31,		
	2023	**2022**	**2021**
		(In thousands)	
Cost of services	$ 2,610	$ 6,511	$ 4,365
Selling, general and administrative	48,904	76,483	55,014
Total non-cash, stock-based compensation	$ 51,514	$ 82,994	$ 59,379

As of December 31, 2023, our total unrecognized compensation cost related to our non-performance based unvested stock awards was $66 million and will be recognized over a weighted-average period of approximately 8.6 years. Share-based compensation expense is recognized based on stock awards ultimately expected to vest.

Valuation

The fair value of each stock option granted (excluding the Ergen 2020 Performance Award) for the years ended December 31, 2023, 2022 and 2021 was estimated at the date of the grant using a Black-Scholes option valuation model with the following assumptions:

	For the Years Ended December 31,		
Stock Options	**2023**	**2022**	**2021**
Risk-free interest rate	3.58 % - 4.61 %	1.35 % - 4.02 %	0.48 % - 1.11 %
Volatility factor	34.30 % - 41.25 %	32.67 % - 34.84 %	29.91 % - 34.51 %
Expected term of options in years	4.1 - 6.6	4.1 - 6.0	4.0 - 5.9
Fair value of options granted	$ 7.40 - $ 7.77	$ 5.97 - $ 9.27	$ 6.20 - $ 8.32

While we currently do not intend to declare dividends on our Class A common stock, we may elect to do so from time to time. Accordingly, the dividend yield percentage used in the Black-Scholes option valuation model was set at zero for all periods. The Black-Scholes option valuation model was developed for use in estimating the fair value of traded stock options which have no vesting restrictions and are fully transferable. Consequently, our estimate of fair value may differ from other valuation models. Further, the Black-Scholes option valuation model requires the input of highly subjective assumptions. Changes in these subjective input assumptions can materially affect the fair value estimate.

We will continue to evaluate the assumptions used to derive the estimated fair value of our stock options as new events or changes in circumstances become known.

15. Commitments and Contingencies

Commitments

As of December 31, 2023, future maturities of our long-term debt, finance lease and contractual obligations are summarized as follows:

	Payments due by period						
	Total	2024	2025	2026	2027	2028	Thereafter
				(In thousands)			
Long-term debt obligations	$ 22,709,868	$ 2,990,195	$ 1,993,990	$ 9,177,173	$ 3,520,219	$ 3,505,748	$ 1,522,543
Interest expense on long-term debt	4,772,180	1,329,564	1,200,118	1,196,621	708,677	295,967	41,233
Finance lease obligations (1)	123,658	56,459	30,381	34,290	2,528	—	—
Interest expense on finance lease obligations (1)	16,969	9,614	5,011	2,298	46	—	—
Other long-term obligations (2)	13,602,205	2,908,585	2,218,024	1,934,515	1,178,310	1,037,835	4,324,936
Operating lease obligations (1)	5,608,209	448,503	485,783	516,143	515,022	471,980	3,170,778
Purchase obligations	2,052,715	2,022,015	26,036	4,664	—	—	—
Total	$ 48,885,804	$ 9,764,935	$ 5,959,343	$ 12,865,704	$ 5,924,802	$ 5,311,530	$ 9,059,490

(1) See Note 9 for further information on leases.
(2) Represents minimum contractual commitments related to communication tower obligations, certain 5G Network Deployment commitments, obligations under the NSA with AT&T and the MNSA with T-Mobile, certain wireless device purchases and marketing obligations, radios, software and integration services and satellite related and other obligations.

In certain circumstances the dates on which we are obligated to make these payments could be delayed.
The table above does not include $610 million of liabilities associated with unrecognized tax benefits that were accrued, as discussed in Note 11 and are included on our Consolidated Balance Sheets as of December 31, 2023. We do not expect any portion of this amount to be paid or settled within the next 12 months.

The table above does not include all potential expenses we expect to incur for our 5G Network Deployment. We currently expect capital expenditures, excluding capitalized interest, for our 5G Network Deployment to be approximately $10 billion, including amounts incurred in 2021, 2022 and 2023, of which approximately $1.557 billion is included in the table above in “Other long-term obligations.”

Agreements in Connection with the Asset Purchase Agreement

On July 1, 2020, we completed the Boost Mobile Acquisition. In connection with the closing of the Boost Mobile Acquisition, we and T-Mobile entered into, among other things, a spectrum purchase agreement for the option to purchase all of Sprint’s 800 MHz spectrum licenses for approximately $3.59 billion (“License Purchase Agreement”). The $3.59 billion is not included in “Other long-term obligations” above. If we elect to not exercise the option to purchase the 800 MHz spectrum licenses pursuant to the License Purchase Agreement or it expires, we were potentially subject to pay T-Mobile a fee of approximately $72 million per the License Purchase Agreement, under certain circumstances. In conjunction with the Amendment that modifies the License Purchase Agreement, discussed below, the $72 million fee has been superseded by the Upfront Payment.

On June 30, 2023, the DOJ provided notice to the District Court that, pursuant to its discretion under the Final Judgment, it granted a 60-day extension of the deadline for T-Mobile to divest the 800 MHz spectrum licenses, which expired on August 30, 2023.

On August 17, 2023, we filed a petition with the District Court seeking an extension of the deadline for T-Mobile to divest the 800 MHz spectrum licenses.

On October 15, 2023, we and T-Mobile entered into the Amendment that, among other things, provides the Extension. In connection with the Extension, we agreed to make an Upfront Payment of $100 million to T-Mobile. The Amendment also resolves all outstanding disputes between the parties with respect to the License Purchase Agreement. On October 25, 2023, we paid the $100 million Upfront Payment to T-Mobile.

The Amendment has been approved by the DOJ in accordance with the Stipulation and Order filed in the District Court on July 26, 2019 and the Final Judgment entered by the District Court on April 1, 2020. The Amendment became effective upon the District Court entering the Amended Final Judgment on October 23, 2023.

The Upfront Payment is fully creditable against the purchase price in the event we exercise our option to purchase the 800 MHz spectrum licenses from T-Mobile. T-Mobile has the right (but not the obligation) to pursue an alternative offer between now and April 1, 2024 provided that we retain the first right to purchase the spectrum before April 1, 2024. If we elect to not exercise the option to purchase the 800 MHz spectrum licenses pursuant to the License Purchase Agreement or it expires, T-Mobile will retain the $100 million Upfront Payment per the Amendment.

Wireless – 5G Network Deployment

We have invested a total of over $30 billion in Wireless spectrum licenses, which includes over $10 billion in initial noncontrolling investments in certain entities. The $30 billion of investments related to Wireless spectrum licenses does not include $9 billion of capitalized interest related to the carrying value of such licenses. See Note 2 for further information on capitalized interest.

We will need to raise additional capital in the future, which may not be available on favorable terms, to fund the efforts described below, as well as, among other things, make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. There can be no assurance that we will be able to profitably deploy these Wireless spectrum licenses, which may affect the carrying amount of these assets and our future financial condition or results of operations.

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Wireless Spectrum Licenses

These Wireless spectrum licenses are subject to certain build-out requirements, as well as certain renewal requirements that are summarized in the table below:

	Carrying Amount	Build-Out Deadlines		Expiration
		Interim	Final	Date
	(In thousands)			
Owned:				
DBS Licenses (1)	$ 677,409			
700 MHz Licenses (2)	711,871		June 14, 2025 (3)	June 2033
AWS-4 Licenses (2)	1,940,000		June 14, 2025 (3)	June 2033
H Block Licenses (2)	1,671,506		June 14, 2025 (4)	June 2033
600 MHz Licenses	6,213,335		June 14, 2025 (5)	June 2029
MVDDS Licenses (1)	24,000			July 2024
LMDS Licenses (1)	—			September 2028
28 GHz Licenses	2,883		October 2, 2029 (6)	October 2029
24 GHz Licenses	11,772		December 11, 2029 (6)	December 2029
37 GHz, 39 GHz and 47 GHz Licenses	202,533		June 4, 2030 (6)	June 2030
3550-3650 MHz Licenses	912,939		March 12, 2031 (6)	March 2031
3.7-3.98 GHz Licenses	2,969	July 23, 2029 (6)	July 23, 2033 (6)	July 2036
3.45–3.55 GHz Licenses	7,327,989	May 4, 2026 (6)	May 4, 2030 (6)	May 2037
1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz (2)	972			March 2026
AWS-3 (8)	5,618,930		October 2025 (7)	October 2025 (7)
Subtotal	25,319,108			
Noncontrolling Investments:				
SNR (9)	4,271,459		October 2025 (7)	October 2025 (7)
Capitalized Interest (10)	8,523,682			
Total as of December 31, 2023	$ 38,114,249			

(1) The build-out deadlines for these licenses have been met.
(2) The interim build-out deadlines for these licenses are in the past.
(3) In a July 14, 2023 filing to the FCC, we certified that we were offering 5G broadband service to at least 70% of the United States population as of June 14, 2023, and certified to meeting other FCC related commitments. As a result of us providing 5G broadband service to over 50% of the U.S. population by June 14, 2023, the final build-out deadlines have been extended automatically to June 14, 2025. For these licenses, we must offer 5G broadband service to at least 70% of the population in each Economic Area (which is a service area established by the FCC). On September 29, 2023, the FCC confirmed we have met all of our June 14, 2023 band-specific 5G deployment commitments, and two of our three nationwide 5G commitments. The single remaining 5G commitment, that at least 70% of the U.S. population has access to average download speeds equal to 35 Mbps, will be confirmed using the drive test methodology agreed to and approved by the FCC. We have six months from September 29, 2023 to complete this drive test.
(4) In a July 14, 2023 filing to the FCC, we certified that we were offering 5G broadband service to at least 70% of the United States population as of June 14, 2023, and certified to meeting other FCC related commitments. As a result of us providing 5G broadband service to over 50% of the U.S. population by June 14, 2023, the final build-out deadlines have been extended automatically to June 14, 2025. For these licenses, we must offer 5G broadband service to at least 75% of the population in each Economic Area (which is a service area established by the FCC). On September 29, 2023, the FCC confirmed we have met all of our June 14, 2023 band-specific 5G deployment commitments, and two of our three nationwide 5G commitments. The single remaining 5G commitment, that at least 70% of the U.S. population has access to average download speeds equal to 35 Mbps, will be confirmed using the drive test methodology agreed to and approved by the FCC. We have six months from September 29, 2023 to complete this drive test.

(5) For these licenses, we must offer 5G broadband service to at least 75% of the population in each Partial Economic Area (which is a service area established by the FCC) by this date. We have also acquired certain additional 600 MHz licenses through private transactions. These licenses are currently subject to their original FCC buildout deadlines.
(6) There are a variety of build-out options and associated build-out metrics associated with these licenses.
(7) For these licenses, we must provide reliable signal coverage and offer service to at least 75% of the population of each license area by this date. The AWS-3 interim build-out requirement was not met and as a result, the AWS-3 expiration date and the AWS-3 final build-out requirement have been accelerated by two years (from October 2027 to October 2025) for each AWS-3 License area for which we did not meet the requirement.
(8) On October 12, 2023, the FCC consented to the sale of Northstar Manager's ownership interests in Northstar Spectrum, which we purchased for a total of approximately $109 million. This purchase resulted in the elimination of all of our noncontrolling investment as it related to Northstar Spectrum as of the purchase date and we continue to consolidate the Northstar Entities as wholly-owned subsidiaries.
(9) Subsequent to December 31, 2023, the FCC consented to the sale of SNR Wireless Management's ownership interests in SNR HoldCo, which was purchased by our direct wholly-owned subsidiary EchoStar SNR HoldCo LLC for a total of approximately $442 million on February 16, 2024. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to SNR HoldCo as of the purchase date and we continue to consolidate the SNR Entities as wholly-owned subsidiaries.
(10) See Note 2 for further information.

Commercialization of Our Wireless Spectrum Licenses and Related Assets. We plan to commercialize our Wireless spectrum licenses through our 5G Network Deployment. We have committed to deploy our 5G Network capable of serving increasingly larger portions of the U.S. population at different deadlines, including 20% of the U.S. population by June 2022 and 70% of the U.S. population by June 2023. If by June 2023, we are offering 5G broadband service to at least 50% of the U.S. population but less than 70% of the U.S. population, the 70% June 2023 deadline will be extended automatically to June 2025; however, as a result, we may, under certain circumstances, potentially be subject to certain penalties. On June 14, 2022, we announced we had successfully reached our 20% population coverage requirement. In addition, we announced and certified to the FCC that as of June 14, 2023, we offer 5G broadband service to over 73% of the U.S. population, or more than 246 million Americans nationwide. On September 29, 2023, the FCC confirmed we have met all of our June 14, 2023 band-specific 5G deployment commitments, and two of our three nationwide 5G commitments. The single remaining 5G commitment, that at least 70% of the U.S. population has access to average download speeds equal to 35 Mbps, will be confirmed using the drive test methodology agreed to and approved by the FCC. We have six months from September 29, 2023 to complete this drive test. We now have the largest commercial deployment of 5G VoNR in the world reaching approximately 200 million Americans and 5G broadband service reaching approximately 250 million Americans. We currently expect capital expenditures, excluding capitalized interest, for our 5G Network Deployment to be approximately $10 billion, including amounts incurred in 2021, 2022 and 2023. See Note 2 for further information.

As a result of us providing 5G broadband service to over 50% of the U.S. population by June 14, 2023, the final build-out deadlines have been extended automatically to June 14, 2025 for us to offer 5G broadband service to at least 70% of the population in each Economic Area for the 700 MHz Licenses and AWS-4 Licenses and at least 75% of the population in each Economic Area for the H Block Licenses.

We may need to make significant additional investments or partner with others to, among other things, continue our 5G Network Deployment and further commercialize, build-out and integrate these licenses and related assets and any additional acquired licenses and related assets, as well as to comply with regulations applicable to such licenses. Depending on the nature and scope of such activities, any such investments or partnerships could vary significantly. In addition, as we continue our 5G Network Deployment, we have and may continue to incur significant additional expenses related to, among other things, research and development, wireless testing and ongoing upgrades to the wireless network infrastructure, software and third-party integration. As a result of these investments, among other factors, we plan to raise additional capital, which may not be available on favorable terms. We may also determine that additional wireless spectrum licenses may be required for our 5G Network Deployment and to compete effectively with other wireless service providers.

DISH Network Noncontrolling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses

Noncontrolling Investments

Recent Developments. On October 12, 2023, the FCC consented to the sale of Northstar Manager's ownership interests in Northstar Spectrum, which we purchased for a total of approximately $109 million. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to Northstar Spectrum as of the purchase date and we continue to consolidate the Northstar Entities as wholly-owned subsidiaries. Subsequent to December 31, 2023, the FCC consented to the sale of SNR Management's ownership interests in SNR HoldCo, which was purchased by our direct wholly-owned subsidiary EchoStar SNR HoldCo LLC for a total of approximately $442 million on February 16, 2024. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to SNR HoldCo as of the purchase date and we continue to consolidate the SNR Entities as wholly-owned subsidiaries.

During 2015, through our wholly-owned subsidiaries American II and American III, we initially made over $10 billion in certain noncontrolling investments in Northstar Spectrum, the parent company of Northstar Wireless, and in SNR HoldCo, the parent company of SNR Wireless, respectively. Under the applicable accounting guidance in ASC 810, Northstar Spectrum and SNR HoldCo are considered VIEs and, based on the characteristics of the structure of these entities and in accordance with the applicable accounting guidance, we consolidate these entities into our financial statements. See Note 2 for further information.

Northstar Investment. As of 2015, through American II, we owned a noncontrolling interest in Northstar Spectrum, which was comprised of 85% of the Class B Common Interests and 100% of the Class A Preferred Interests of Northstar Spectrum. Northstar Manager is the sole manager of Northstar Spectrum and owns a controlling interest in Northstar Spectrum, which was comprised of 15% of the Class B Common Interests of Northstar Spectrum. As of March 31, 2018, the total equity contributions from American II and Northstar Manager to Northstar Spectrum were approximately $7.621 billion and $133 million, respectively. As of March 31, 2018, the total loans from American II to Northstar Wireless under the Northstar Credit Agreement (as defined below) for payments to the FCC related to the Northstar Licenses (as defined below) were approximately $500 million. See below for further information.

Northstar Purchase Agreement. On December 30, 2020, through our wholly-owned subsidiary American II, we entered into a Purchase Agreement (the "Northstar Purchase Agreement") with Northstar Manager and Northstar Spectrum, pursuant to which American II purchased 80% of Northstar Manager's Class B Common Interests in Northstar Spectrum (the "Northstar Transaction") for a purchase price of approximately $312 million. As a result of the Northstar Transaction, through American II, we hold 97% of the Class B Common Interests in Northstar Spectrum and Northstar Manager holds 3% of the Class B Common Interests in Northstar Spectrum. Other than the change in ownership percentage of Northstar Spectrum, the Northstar Transaction did not modify or amend in any way the existing arrangements between or among the Northstar parties.

SNR Investment. As of 2015, through American III, we own a noncontrolling interest in SNR HoldCo, which is comprised of 85% of the Class B Common Interests and 100% of the Class A Preferred Interests of SNR HoldCo. SNR Management is the sole manager of SNR HoldCo and owns a controlling interest in SNR HoldCo, which is comprised of 15% of the Class B Common Interests of SNR HoldCo. As of March 31, 2018, the total equity contributions from American III and SNR Management to SNR HoldCo were approximately $5.590 billion and $93 million, respectively. As of March 31, 2018, the total loans from American III to SNR Wireless under the SNR Credit Agreement (as defined below) for payments to the FCC related to the SNR Licenses (as defined below) were approximately $500 million. See below for further information.

AWS-3 Auction

Northstar Wireless and SNR Wireless each filed applications with the FCC to participate in Auction 97 (the "AWS-3 Auction") for the purpose of acquiring certain AWS-3 Licenses. Each of Northstar Wireless and SNR Wireless applied to receive bidding credits of 25% as designated entities under applicable FCC rules. Northstar Wireless was the winning bidder for AWS-3 Licenses with gross winning bid amounts totaling approximately $7.845 billion, which after taking into account a 25% bidding credit, was approximately $5.884 billion. SNR Wireless was the winning bidder for AWS-3 Licenses with gross winning bid amounts totaling approximately $5.482 billion, which after taking into account a 25% bidding credit, was approximately $4.112 billion. In addition to the net winning bids, SNR Wireless made a bid withdrawal payment of approximately $8 million.

FCC Order and October 2015 Arrangements. On August 18, 2015, the FCC released a *Memorandum Opinion and Order*, FCC 15-104 (the "Order") in which the FCC determined, among other things, that DISH Network has a controlling interest in, and is an affiliate of, Northstar Wireless and SNR Wireless, and therefore DISH Network's revenues should be attributed to them, which in turn makes Northstar Wireless and SNR Wireless ineligible to receive the 25% bidding credits (approximately $1.961 billion for Northstar Wireless and $1.370 billion for SNR Wireless). On November 23, 2020, the FCC released a Memorandum Opinion and Order on Remand, FCC 20-160, that found that Northstar Wireless and SNR Wireless are not eligible for bidding credits based on the FCC's determination that they remain under DISH Network's *de facto* control. Northstar Wireless and SNR Wireless have appealed the FCC's order to the D.C. Circuit Court of Appeals. On June 21, 2022, the United States Court of Appeals for the District of Columbia issued an Opinion rejecting this challenge. On January 17, 2023, Northstar Wireless filed a petition for a writ of certiorari asking the United States Supreme Court to hear a further appeal, but that petition was denied on June 30, 2023.

Letters Exchanged between Northstar Wireless and the FCC Wireless Bureau. As outlined in letters exchanged between Northstar Wireless and the Wireless Telecommunications Bureau of the FCC (the "FCC Wireless Bureau"), Northstar Wireless paid the gross winning bid amounts for 261 AWS-3 Licenses (the "Northstar Licenses") totaling approximately $5.619 billion through the application of funds already on deposit with the FCC. Northstar Wireless also notified the FCC that it would not be paying the gross winning bid amounts for 84 AWS-3 Licenses totaling approximately $2.226 billion. As a result of the nonpayment of those gross winning bid amounts, the FCC retained those licenses and Northstar Wireless owed the FCC an additional interim payment of approximately $334 million (the "Northstar Interim Payment"), which is equal to 15% of $2.226 billion. The Northstar Interim Payment was recorded as an expense during the fourth quarter of 2015. Northstar Wireless immediately satisfied the Northstar Interim Payment through the application of funds already on deposit with the FCC and an additional loan from American II of approximately $69 million. As a result, the FCC will not deem Northstar Wireless to be a "current defaulter" under applicable FCC rules.

In addition, the FCC Wireless Bureau acknowledged that Northstar Wireless' nonpayment of those gross winning bid amounts does not constitute action involving gross misconduct, misrepresentation or bad faith. Therefore, the FCC concluded that such nonpayment will not affect the eligibility of Northstar Wireless, its investors (including DISH Network) or their respective affiliates to participate in future spectrum auctions (including Auction 1000 and any re-auction of the AWS-3 licenses retained by the FCC). At this time, DISH Network (through itself, a subsidiary or another entity in which it may hold a direct or indirect interest) expects to participate in any re-auction of those AWS-3 licenses.

If the winning bids from re-auction or other award of the AWS-3 licenses retained by the FCC are greater than or equal to the winning bids of Northstar Wireless, no additional amounts will be owed to the FCC. However, if those winning bids are less than the winning bids of Northstar Wireless, then Northstar Wireless will be responsible for the difference less any overpayment of the Northstar Interim Payment (which will be recalculated as 15% of the winning bids from re-auction or other award) (the "Northstar Re-Auction Payment"). For example, if the winning bids in a re-auction are $1, the Northstar Re-Auction Payment would be approximately $1.892 billion, which is calculated as the difference between $2.226 billion (the Northstar winning bid amounts) and $1 (the winning bids from re-auction) less the resulting $334 million overpayment of the Northstar Interim Payment. As discussed above, at this time, DISH Network (through itself, a subsidiary or another entity in which it may hold a direct or indirect interest) expects to participate in any re-auction. We cannot predict with any degree of certainty the timing or outcome of any re-auction or the amount of any Northstar Re-Auction Payment.

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DISH Network Guaranty in Favor of the FCC for Certain Northstar Wireless Obligations. On October 1, 2015, DISH Network entered into a guaranty in favor of the FCC (the "FCC Northstar Guaranty") with respect to the Northstar Interim Payment (which was satisfied on October 1, 2015) and any Northstar Re-Auction Payment. The FCC Northstar Guaranty provides, among other things, that during the period between the due date for the payments guaranteed under the FCC Northstar Guaranty and the date such guaranteed payments are paid: (i) Northstar Wireless' payment obligations to American II under the Northstar Credit Agreement will be subordinated to such guaranteed payments; and (ii) DISH Network or American II will withhold exercising certain rights as a creditor of Northstar Wireless.

Letters Exchanged between SNR Wireless and the FCC Wireless Bureau. As outlined in letters exchanged between SNR Wireless and the FCC Wireless Bureau, SNR Wireless paid the gross winning bid amounts for 244 AWS-3 Licenses (the "SNR Licenses") totaling approximately $4.271 billion through the application of funds already on deposit with the FCC and a portion of an additional loan from American III in an aggregate amount of approximately $344 million (which included an additional bid withdrawal payment of approximately $3 million). SNR Wireless also notified the FCC that it would not be paying the gross winning bid amounts for 113 AWS-3 Licenses totaling approximately $1.211 billion.

As a result of the nonpayment of those gross winning bid amounts, the FCC retained those licenses and SNR Wireless owed the FCC an additional interim payment of approximately $182 million (the "SNR Interim Payment"), which is equal to 15% of $1.211 billion. The SNR Interim Payment was recorded as an expense during the fourth quarter of 2015. SNR Wireless immediately satisfied the SNR Interim Payment through a portion of an additional loan from American III in an aggregate amount of approximately $344 million. As a result, the FCC will not deem SNR Wireless to be a "current defaulter" under applicable FCC rules.

In addition, the FCC Wireless Bureau acknowledged that SNR Wireless' nonpayment of those gross winning bid amounts does not constitute action involving gross misconduct, misrepresentation or bad faith. Therefore, the FCC concluded that such nonpayment will not affect the eligibility of SNR Wireless, its investors (including DISH Network) or their respective affiliates to participate in future spectrum auctions (including Auction 1000 and any re-auction of the AWS-3 licenses retained by the FCC). At this time, DISH Network (through itself, a subsidiary or another entity in which it may hold a direct or indirect interest) expects to participate in any re-auction of those AWS-3 licenses.

If the winning bids from re-auction or other award of the AWS-3 licenses retained by the FCC are greater than or equal to the winning bids of SNR Wireless, no additional amounts will be owed to the FCC. However, if those winning bids are less than the winning bids of SNR Wireless, then SNR Wireless will be responsible for the difference less any overpayment of the SNR Interim Payment (which will be recalculated as 15% of the winning bids from re-auction or other award) (the "SNR Re-Auction Payment"). For example, if the winning bids in a re-auction are $1, the SNR Re-Auction Payment would be approximately $1.029 billion, which is calculated as the difference between $1.211 billion (the SNR winning bid amounts) and $1 (the winning bids from re-auction) less the resulting $182 million overpayment of the SNR Interim Payment. As discussed above, at this time, DISH Network (through itself, a subsidiary or another entity in which it may hold a direct or indirect interest) expects to participate in any re-auction. We cannot predict with any degree of certainty the timing or outcome of any re-auction or the amount of any SNR Re-Auction Payment.

DISH Network Guaranty in Favor of the FCC for Certain SNR Wireless Obligations. On October 1, 2015, DISH Network entered into a guaranty in favor of the FCC (the "FCC SNR Guaranty") with respect to the SNR Interim Payment (which was satisfied on October 1, 2015) and any SNR Re-Auction Payment. The FCC SNR Guaranty provides, among other things, that during the period between the due date for the payments guaranteed under the FCC SNR Guaranty and the date such guaranteed payments are paid: (i) SNR Wireless' payment obligations to American III under the SNR Credit Agreement will be subordinated to such guaranteed payments; and (ii) DISH Network or American III will withhold exercising certain rights as a creditor of SNR Wireless.

FCC Licenses. On October 27, 2015, the FCC granted the Northstar Licenses to Northstar Wireless and the SNR Licenses to SNR Wireless, respectively, which are recorded in "Regulatory authorizations, net" on our Consolidated Balance Sheets. The AWS-3 Licenses are subject to certain interim and final build-out requirements. By October 2021, Northstar Wireless and SNR Wireless must provide reliable signal coverage and offer service to at least 40% of the population in each area covered by an individual AWS-3 License (the "AWS-3 Interim Build-Out Requirement"). By October 2027, Northstar Wireless and SNR Wireless must provide reliable signal coverage and offer service to at least 75% of the population in each area covered by an individual AWS-3 License (the "AWS-3 Final Build-Out Requirement"). The AWS-3 Interim Build-Out Requirement was not met and as a result, the AWS-3 License term and the AWS-3 Final Build-Out Requirement have been accelerated by two years (from October 2027 to October 2025) for each AWS-3 License area in which Northstar Wireless and SNR Wireless did not meet the requirement.
If the AWS-3 Final Build-Out Requirement is not met, the authorization for each AWS-3 License area in which Northstar Wireless and SNR Wireless do not meet the requirement may terminate. These wireless spectrum licenses expire in October 2027 unless they are renewed by the FCC. There can be no assurance that the FCC will renew these wireless spectrum licenses.

Qui Tam. On September 23, 2016, the United States District Court for the District of Columbia unsealed a qui tam complaint that was filed by Vermont National Telephone Company ("Vermont National") against us; our wholly-owned subsidiaries, American AWS-3 Wireless I L.L.C., American II, American III, and DISH Wireless Holding L.L.C.; Charles W. Ergen (our Chairman) and Cantey M. Ergen (a member of our Board of Directors); Northstar Wireless; Northstar Spectrum; Northstar Manager; SNR Wireless; SNR HoldCo; SNR Management; and certain other parties. See "*Contingencies – Litigation – Vermont National Telephone Company"* for further information.

D.C. Circuit Court Opinion. On August 29, 2017, the United States Court of Appeals for the District of Columbia Circuit (the "D.C. Circuit") in *SNR Wireless LicenseCo, LLC, et al. v. Federal Communications Commission*, 868 F.3d 1021 (D.C. Cir. 2017) (the "Appellate Decision") affirmed the Order in part, and remanded the matter to the FCC to give Northstar Wireless and SNR Wireless an opportunity to seek to negotiate a cure of the issues identified by the FCC in the Order (a "Cure"). On January 26, 2018, SNR Wireless and Northstar Wireless filed a petition for a writ of certiorari, asking the United States Supreme Court to hear an appeal from the Appellate Decision, which the United States Supreme Court denied on June 25, 2018.

Order on Remand. On January 24, 2018, the FCC released an Order on Remand, DA 18-70 (the "Order on Remand") purporting to establish a procedure to afford Northstar Wireless and SNR Wireless the opportunity to implement a Cure pursuant to the Appellate Decision. On June 8, 2018, Northstar Wireless and SNR Wireless each filed amended agreements to demonstrate that, in light of such changes, each of Northstar Wireless and SNR Wireless qualified for the very small business bidding credit that it sought in the AWS-3 Auction. Northstar Wireless and SNR Wireless filed a Joint Application for Review of the Order on Remand requesting, among other things, an iterative negotiation process with the FCC regarding a Cure, which was denied on July 12, 2018. The pleading cycle established in the Order on Remand concluded in October 2018. On November 23, 2020, the FCC issued a Memorandum Opinion and Order that concluded, among other things, that DISH Network retained de facto control over Northstar Wireless and SNR Wireless and denied the very small business bidding credit sought by Northstar Wireless and SNR Wireless, even though the parties had eliminated or significantly modified every provision previously deemed to have been disqualifying by the FCC. Northstar Wireless and SNR Wireless timely filed an appeal of the FCC's 2020 decision. On June 21, 2022, the United States Court of Appeals for the District of Columbia issued an Opinion rejecting this challenge. On January 17, 2023, Northstar Wireless filed a petition for a writ of certiorari asking the United States Supreme Court to hear a further appeal, but that petition was denied on June 30, 2023.

Northstar Operative Agreements

Northstar LLC Agreement. Northstar Spectrum is governed by a limited liability company agreement by and between American II and Northstar Manager (the "Northstar Spectrum LLC Agreement"). Pursuant to the Northstar Spectrum LLC Agreement, American II and Northstar Manager made pro-rata equity contributions in Northstar Spectrum.
On March 31, 2018, American II, Northstar Spectrum, and Northstar Manager amended and restated the Northstar Spectrum LLC Agreement, to, among other things: (i) exchange $6.870 billion of the amounts outstanding and owed by Northstar Wireless to American II pursuant to the Northstar Credit Agreement (as defined below) for 6,870,493 Class A Preferred Interests in Northstar Spectrum (the "Northstar Preferred Interests"); (ii) replace the existing investor protection provisions with the investor protections described by the FCC in Baker Creek Communications, LLC, Memorandum Opinion and Order, 13 FCC Rcd 18709, 18715 (1998); (iii) delete the obligation of Northstar Manager to consult with American II regarding budgets and business plans; and (iv) remove the requirement that Northstar Spectrum's systems be interoperable with ours. The Northstar Preferred Interests: (a) are non-voting; (b) have a 12 percent mandatory quarterly distribution, which can be paid in cash or additional face amount of Northstar Preferred Interests at the sole discretion of Northstar Manager; and (c) have a liquidation preference equal to the then-current face amount of the Northstar Preferred Interests plus accrued and unpaid mandatory quarterly distributions in the event of certain liquidation events or deemed liquidation events (e.g., a merger or dissolution of Northstar Spectrum, or a sale of substantially all of Northstar Spectrum's assets). As a result of the exchange noted in (i) above, a principal amount of $500 million of debt remains under the Northstar Credit Agreement, as described below.

On June 7, 2018, American II, Northstar Spectrum, and Northstar Manager amended and restated the Second Amended and Restated Limited Liability Company Agreement, dated March 31, 2018, by and among American II, Northstar Spectrum, and Northstar Manager, to, among other things: (i) reduce the mandatory quarterly distribution for the Northstar Preferred Interests from 12 percent to eight percent from and after June 7, 2018; (ii) increase the window for Northstar Manager to "put" its interest in Northstar Spectrum to Northstar Spectrum after October 27, 2020 from 30 days to 90 days; (iii) provide an additional 90-day window for Northstar Manager to put its interest in Northstar Spectrum to Northstar Spectrum commencing on October 27, 2021; (iv) provide a right for Northstar Manager to require an appraisal of the fair market value of its interest in Northstar Spectrum at any time from October 27, 2022 through October 27, 2024, coupled with American II having the right to accept the offer to sell from Northstar Manager; (v) allow Northstar Manager to sell its interest in Northstar Spectrum without American II's consent any time after October 27, 2020 (previously October 27, 2025); (vi) allow Northstar Spectrum to conduct an initial public offering without American II's consent any time after October 27, 2022 (previously October 27, 2029); (vii) remove American II's rights of first refusal with respect to Northstar Manager's sale of its interest in Northstar Spectrum or Northstar Spectrum's sale of any AWS-3 Licenses; and (viii) remove American II's tag along rights with respect to Northstar Manager's sale of its interest in Northstar Spectrum. Northstar Manager had the right to put its interest in Northstar Spectrum to Northstar Spectrum for a 90-day period beginning October 27, 2020, which Northstar Manager waived in connection with the Northstar Purchase Agreement.

On January 24, 2022, American II, Northstar Spectrum, and Northstar Manager amended and restated the Third Amended and Restated Limited Liability Company Agreement, dated June 7, 2018, by and among American II, Northstar Spectrum, and Northstar Manager, to, among other things: (i) increase the second window for Northstar Manager to "put" its interest in Northstar Spectrum to Northstar Spectrum after October 27, 2021 from 90 days to 270 days.

On July 22, 2022, American II, Northstar Spectrum, and Northstar Manager amended and restated the Third Amended and Restated Limited Liability Company Agreement, dated June 7, 2018, by and among American II, Northstar Spectrum, and Northstar Manager, to, among other things, increase the second window for Northstar Manager to "put" its interest in Northstar Spectrum to Northstar Spectrum after July 24, 2022 from 270 days to 360 days. On October 21, 2022, we, through our wholly-owned subsidiary American II received notice that Northstar Manager exercised the Northstar Put Right effective as of October 21, 2022. On October 12, 2023, the FCC consented to the sale of Northstar Manager's ownership interests in Northstar Spectrum, which we purchased for a total of approximately $109 million. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to Northstar Spectrum as of the purchase date and we continue to consolidate the Northstar Entities as wholly-owned subsidiaries.

Northstar Wireless Credit Agreement. On October 1, 2015, American II, Northstar Wireless and Northstar Spectrum amended the First Amended and Restated Credit Agreement dated October 13, 2014, by and among American II, as Lender, Northstar Wireless, as Borrower, and Northstar Spectrum, as Guarantor (as amended, the "Northstar Credit Agreement"), to provide, among other things, that: (i) the Northstar Interim Payment and any Northstar Re-Auction Payment will be made by American II directly to the FCC and will be deemed as loans under the Northstar Credit Agreement; (ii) the FCC is a third-party beneficiary with respect to American II's obligation to pay the Northstar Interim Payment and any Northstar Re-Auction Payment; (iii) in the event that the winning bids from re-auction or other award of the AWS-3 licenses retained by the FCC are less than the winning bids of Northstar Wireless, the purchaser, assignee or transferee of any AWS-3 Licenses from Northstar Wireless is obligated to pay its pro-rata share of the difference (and Northstar Wireless remains jointly and severally liable for such pro-rata share); and (iv) during the period between the due date for the payments guaranteed under the FCC Northstar Guaranty (as discussed below) and the date such guaranteed payments are paid, Northstar Wireless' payment obligations to American II under the Northstar Credit Agreement will be subordinated to such guaranteed payments.

On March 31, 2018, American II, Northstar Wireless, and Northstar Spectrum amended and restated the Northstar Credit Agreement, to, among other things: (i) lower the interest rate on the remaining $500 million principal balance under the Northstar Credit Agreement from 12 percent per annum to six percent per annum; (ii) eliminate the higher interest rate that would apply in the case of an event of default; and (iii) modify and/or remove certain obligations of Northstar Wireless to prepay the outstanding loan amounts.

On June 7, 2018, American II, Northstar Wireless, and Northstar Spectrum amended and restated the Northstar Credit Agreement to, among other things: (i) extend the maturity date on the remaining loan balance from seven years to ten years; and (ii) remove the obligation of Northstar Wireless to obtain American II's consent for unsecured financing and equipment financing in excess of $25 million.

SNR Operative Agreements

SNR LLC Agreement. SNR HoldCo is governed by a limited liability company agreement by and between American III and SNR Management (the "SNR HoldCo LLC Agreement"). Pursuant to the SNR HoldCo LLC Agreement, American III and SNR Management made pro-rata equity contributions in SNR HoldCo.

On March 31, 2018, American III, SNR Holdco, SNR Wireless Management, and John Muleta amended and restated the SNR HoldCo LLC Agreement, to, among other things: (i) exchange $5.065 billion of the amounts outstanding and owed by SNR Wireless to American III pursuant to the SNR Credit Agreement (as defined below) for 5,065,415 Class A Preferred Interests in SNR Holdco (the "SNR Preferred Interests"); (ii) replace the existing investor protection provisions with the investor protections described by the FCC in Baker Creek Communications, LLC, Memorandum Opinion and Order, 13 FCC Rcd 18709, 18715 (1998); (iii) delete the obligation of SNR Management to consult with American III regarding budgets and business plans; and (iv) remove the requirement that SNR Management's systems be interoperable with ours. The SNR Preferred Interests: (a) are non-voting; (b) have a 12 percent mandatory quarterly distribution, which can be paid in cash or additional face amount of SNR Preferred Interests at the sole discretion of SNR Management; and (c) have a liquidation preference equal to the then-current face amount of the SNR Preferred Interests plus accrued and unpaid mandatory quarterly distributions in the event of certain liquidation events or deemed liquidation events (e.g., a merger or dissolution of SNR Holdco, or a sale of substantially all of SNR Holdco's assets). As a result of the exchange noted in (i) above, a principal amount of $500 million of debt remains under the SNR Credit Agreement, as described below.

On June 7, 2018, American III, SNR Holdco, SNR Management, and John Muleta amended and restated the Second Amended and Restated Limited Liability Company Agreement, dated March 31, 2018, by and among American III, SNR Holdco, SNR Management and John Muleta, to, among other things: (i) reduce the mandatory quarterly distribution for the SNR Preferred Interests from 12 percent to eight percent from and after June 7, 2018; (ii) increase the window for SNR Management to "put" its interest in SNR Holdco to SNR Holdco after October 27, 2020 from 30 days to 90 days; (iii) provide an additional 90-day window for SNR Management to put its interest in SNR Holdco to SNR Holdco commencing on October 27, 2021; (iv) provide a right for SNR Management to require an appraisal of the fair market value of its interest in SNR Holdco at any time from October 27, 2022 through October 27, 2024, coupled with American III having the right to accept the offer to sell from SNR Management; (v) allow SNR Management to sell its interest in SNR Holdco without American III's consent any time after October 27, 2020 (previously October 27, 2025); (vi) allow SNR Holdco to conduct an initial public offering without American III's consent any time after October 27, 2022 (previously October 27, 2029); (vii) remove American III's rights of first refusal with respect to SNR Management's sale of its interest in SNR Holdco or SNR Holdco's sale of any AWS-3 Licenses; and (viii) remove American III's tag along rights with respect to SNR Management's sale of its interest in SNR Holdco. SNR Management had the right to put its interest in SNR Holdco to SNR Holdco for a 90-day period from October 27, 2020. The First SNR Put Window closed in the first quarter of 2021, was not exercised and expired in January 2021.

On November 15, 2021, we, through our wholly-owned subsidiary American III received notice that SNR Management exercised the SNR Put Right effective as of November 15, 2021. Subsequent to December 31, 2023, the FCC consented to the sale of SNR Management's ownership interests in SNR HoldCo, which was purchased by our direct wholly-owned subsidiary EchoStar SNR HoldCo LLC for a total of approximately $442 million on February 16, 2024. This purchase resulted in the elimination of all of our redeemable noncontrolling interest as it related to SNR HoldCo as of the purchase date and we continue to consolidate the SNR Entities as wholly-owned subsidiaries.

SNR Credit Agreement. On October 1, 2015, American III, SNR Wireless and SNR HoldCo amended the First Amended and Restated Credit Agreement dated October 13, 2014, by and among American III, as Lender, SNR Wireless, as Borrower, and SNR HoldCo, as Guarantor (as amended, the "SNR Credit Agreement"), to provide, among other things, that: (i) the SNR Interim Payment and any SNR Re-Auction Payment will be made by American III directly to the FCC and will be deemed as loans under the SNR Credit Agreement; (ii) the FCC is a third-party beneficiary with respect to American III's obligation to pay the SNR Interim Payment and any SNR Re-Auction Payment; (iii) in the event that the winning bids from re-auction or other award of the AWS-3 licenses retained by the FCC are less than the winning bids of SNR Wireless, the purchaser, assignee or transferee of any AWS-3 Licenses from SNR Wireless is obligated to pay its pro-rata share of the difference (and SNR Wireless remains jointly and severally liable for such pro-rata share); and (iv) during the period between the due date for the payments guaranteed under the FCC SNR Guaranty (as discussed below) and the date such guaranteed payments are paid, SNR Wireless' payment obligations to American III under the SNR Credit Agreement will be subordinated to such guaranteed payments.

On March 31, 2018, American III, SNR Wireless, and SNR Holdco amended and restated the SNR Credit Agreement, to, among other things: (i) lower the interest rate on the remaining $500 million principal balance under the SNR Credit Agreement from 12 percent per annum to six percent per annum; (ii) eliminate the higher interest rate that would apply in the case of an event of default; and (iii) modify and/or remove certain obligations of SNR Wireless to prepay the outstanding loan amounts.

On June 7, 2018, American III, SNR Wireless, and SNR Holdco amended and restated the SNR Credit Agreement to, among other things: (i) extend the maturity date on the remaining loan balance from seven years to ten years; and (ii) remove the obligation of SNR Wireless to obtain American III's consent for unsecured financing and equipment financing in excess of $25 million.

Satellite Insurance

We generally do not carry commercial launch or in-orbit insurance on any of the satellites we own. We generally do not use commercial insurance to mitigate the potential financial impact of launch or in-orbit failures because we believe that the cost of insurance premiums is uneconomical relative to the risk of such failures. While we generally have had in-orbit satellite capacity sufficient to transmit our existing channels and some backup capacity to recover the transmission of certain critical programming, our backup capacity is limited. In the event of a failure or loss of any of our owned or leased satellites, we may need to acquire or lease additional satellite capacity or relocate one of our other owned or leased satellites and use it as a replacement for the failed or lost satellite.

Purchase Obligations

Our 2023 purchase obligations primarily consist of binding purchase orders for certain fixed contractual commitments to purchase programming content, receiver systems and related equipment, broadband equipment, digital broadcast operations, transmission costs, streaming delivery technology and infrastructure, engineering services, and other products and services. In addition, our 2023 purchase obligations also include wireless devices related to our Retail Wireless business. Our purchase obligations may fluctuate significantly from period to period due to, among other things, management's timing of payments and inventory purchases, which can materially impact our future operating asset and liability balances, and our future working capital requirements. Furthermore, our 2023 purchase obligations related to certain 5G Network Deployment commitments are included in "Other long-term obligations" in the "Commitments" table above.

Programming Contracts

In the normal course of business, we enter into contracts to purchase programming content in which our payment obligations are generally contingent on the number of Pay-TV subscribers to whom we provide the respective content. These programming commitments are not included in the "Commitments" table above. The terms of our contracts typically range from one to ten years with annual rate increases. Our programming expenses will increase to the extent we are successful in growing our Pay-TV subscriber base. In addition, programming costs per subscriber continue to increase due to contractual price increases and the renewal of long-term programming contracts on less favorable pricing terms.

Patents and Intellectual Property

Many entities, including some of our competitors, have or may in the future obtain patents and other intellectual property rights that cover or affect products or services that we offer or that we may offer in the future. We may not be aware of all intellectual property rights that our products or services may potentially infringe. Damages in patent infringement cases can be substantial, and in certain circumstances can be trebled. Further, we cannot estimate the extent to which we may be required in the future to obtain licenses with respect to patents held by others and the availability and cost of any such licenses. Various parties have asserted patent and other intellectual property rights with respect to components of our products and services.

We cannot be certain that these persons do not own the rights they claim, that our products do not infringe on these rights, and/or that these rights are not valid. Further, we cannot be certain that we would be able to obtain licenses from these persons on commercially reasonable terms or, if we were unable to obtain such licenses, that we would be able to redesign our products to avoid infringement.

Litigation

We are involved in a number of legal proceedings (including those described below) concerning matters arising in connection with the conduct of our business activities. Many of these proceedings are at preliminary stages, and many of these proceedings seek an indeterminate amount of damages. We regularly evaluate the status of the legal proceedings in which we are involved to assess whether a loss is probable or there is a reasonable possibility that a loss or an additional loss may have been incurred and to determine if accruals are appropriate. If accruals are not appropriate, we further evaluate each legal proceeding to assess whether an estimate of the possible loss or range of possible loss can be made.

For certain cases described on the following pages, management is unable to provide a meaningful estimate of the possible loss or range of possible loss because, among other reasons, (i) the proceedings are in various stages; (ii) damages have not been sought; (iii) damages are unsupported and/or exaggerated; (iv) there is uncertainty as to the outcome of pending appeals or motions; (v) there are significant factual issues to be resolved; and/or (vi) there are novel legal issues or unsettled legal theories to be presented or a large number of parties. For these cases, however, management does not believe, based on currently available information, that the outcomes of these proceedings will have a material adverse effect on our financial condition, though the outcomes could be material to our operating results for any particular period, depending, in part, upon the operating results for such period.

ClearPlay, Inc.

On March 13, 2014, ClearPlay, Inc. (“ClearPlay”) filed a complaint against us and our wholly-owned subsidiaries DISH Network and DISH Network L.L.C., and our then wholly-owned subsidiary EchoStar Technologies L.L.C., in the United States District Court for the District of Utah. The complaint alleges willful infringement of United States Patent Nos. 6,898,799 (the “799 patent”), entitled “Multimedia Content Navigation and Playback”; 7,526,784 (the “784 patent”), entitled “Delivery of Navigation Data for Playback of Audio and Video Content”; 7,543,318 (the “318 patent”), entitled “Delivery of Navigation Data for Playback of Audio and Video Content”; 7,577,970 (the “970 patent”), entitled “Multimedia Content Navigation and Playback”; and 8,117,282 (the “282 patent”), entitled “Media Player Configured to Receive Playback Filters From Alternative Storage Mediums.” ClearPlay alleges that the AutoHop™ feature of our Hopper® set-top box infringes the asserted patents. On February 11, 2015, the case was stayed pending various third-party challenges before the United States Patent and Trademark Office regarding the validity of certain of the patents asserted in the action.

In those third-party challenges, the United States Patent and Trademark Office found that all claims of the 282 patent are unpatentable, and that certain claims of the 784 patent and 318 patent are unpatentable. ClearPlay appealed as to the 784 patent and the 318 patent, and on August 23, 2016, the United States Court of Appeals for the Federal Circuit affirmed the findings of the United States Patent and Trademark Office. On October 31, 2016, the stay was lifted, and in May 2017, ClearPlay agreed to dismiss us and DISH Network as defendants, leaving DISH Network L.L.C. and DISH Technologies L.L.C. as the sole defendants.

On October 16, October 21, November 2, 2020 and November 9, 2020, DISH Network L.L.C. filed petitions with the United States Patent and Trademark Office requesting ex parte reexamination of the validity of the asserted claims of, respectively, the 784 patent, the 799 patent, the 318 patent and the 970 patent; and on November 2, November 20, December 14 and December 15, 2020, the United States Patent and Trademark Office granted each request for reexamination. On May 7, 2021, May 25, 2021, June 25, 2021 and July 7, 2021, the United States Patent and Trademark Office issued Ex Parte Reexamination Certificates confirming the patentability of the challenged claims of, respectively, the 799 patent, the 784 patent, the 318 patent and the 970 patent.

In October and November 2021, DISH Network L.L.C. filed petitions with the United States Patent and Trademark Office requesting ex parte reexamination of the validity of certain asserted claims of the 784 patent, the 799 patent and the 970 patent. In November and December, 2021, the United States Patent and Trademark Office granted review of the challenged claims of the 799 patent and the 970 patent, but denied review of the challenged claims of the 784 patent. On January 24, 2022, an examiner of the United States Patent and Trademark Office affirmed the challenged claims of the 799 patent, and on January 19, 2023, an examiner of the United States Patent and Trademark Office affirmed the challenged claims of the 970 patent.

In an order dated January 31, 2023, the Court granted in part and denied in part DISH Network L.L.C.'s and DISH Technologies L.L.C.'s motion for summary judgment. Thereafter, ClearPlay narrowed its case to three asserted claims: one under the 799 patent and two under the 970 patent. Following a two-week trial, on March 10, 2023, the jury returned a verdict that DISH Network L.L.C. and DISH Technologies L.L.C. infringed each of the asserted patent claims (though not willfully), and awarded damages of $469 million. That verdict became moot on March 21, 2023, when the trial court indicated that it would grant DISH Network L.L.C.'s and DISH Technologies L.L.C.'s motion for judgment as a matter of law, thus effectively vacating the jury award. On June 2, 2023, the Court entered its formal order granting judgment as a matter of law. On December 12, 2023, the Court denied ClearPlay's motion to alter or amend the judgment. ClearPlay has filed a notice of appeal to the United States Court of Appeals for the Federal Circuit.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

Data Breach Class Actions

On May 9, 2023, Susan Owen-Brooks, an alleged customer, filed a putative class action complaint against our wholly-owned subsidiary DISH Network in the United States District Court for the District of Colorado. She purports to represent a nationwide class of all individuals in the United States who allegedly had private information stolen as a result of the February 23, 2023 Cyber-security Incident (and a North Carolina statewide subclass of the same individuals). On behalf of the nationwide class, she alleges claims for contractual breaches, negligence and unjust enrichment (and, on behalf of the North Carolina subclass only, violation of the North Carolina Deceptive Trade Practices Act), and seeks monetary damages, injunctive relief and a declaratory judgment. Since that filing, ten additional putative class action complaints have been filed in the United States District Court for the District of Colorado, purporting to represent the same nationwide class of people, and Owen-Brooks has filed an amended complaint. On August 2, 2023, the Court issued an order consolidating the first ten cases (the eleventh was dismissed) and, on November 16, 2023, the plaintiffs filed a consolidated amended class action complaint.

We intend to vigorously defend this case. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

Digital Broadcasting Solutions, LLC

On August 29, 2022, Digital Broadcasting Solutions, LLC filed a complaint against our wholly-owned subsidiaries DISH Network L.L.C. and DISH Technologies L.L.C. in the United States District Court for the Eastern District of Texas. The complaint alleges infringement of U.S. Patent No. 8,929,710 (the "710 patent") and U.S. Patent No. 9,538,122 (the "122 patent"), each entitled "System and method for time shifting at least a portion of a video program." Generally, the plaintiff contends that the AutoHop feature of our Hopper® set-top boxes infringes the asserted patents. On June 21, 2023, the Court granted the motion of DISH Network L.L.C. and DISH Technologies L.L.C. to have the case transferred to the United States District Court for the District of Colorado.

In May 2023, DISH Network L.L.C. and DISH Technologies L.L.C. filed petitions with the United States Patent and Trademark Office challenging the validity of all claims of the 710 patent and the 122 patent and, on December 11, 2023, the United States Patent and Trademark Office entered decisions instituting each petition.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

Entropic Communications, LLC (first action)

On March 9, 2022, Entropic Communications, LLC ("Entropic") filed a complaint against our wholly-owned subsidiaries DISH Network, DISH Network L.L.C. and Dish Network Service L.L.C. in the United States District Court for the Eastern District of Texas. The complaint alleges infringement of U.S. Patent No. 7,130,576 (the "576 patent"),

entitled “Signal Selector and Combiner for Broadband Content Distribution”; U.S. Patent No. 7,542,715 (the “715 Patent”), entitled “Signal Selector and Combiner for Broadband Content Distribution”; and U.S. Patent No. 8,792,008 (the “008 Patent”), entitled “Method and Apparatus for Spectrum Monitoring.” On March 30, 2022, Entropic filed an amended complaint alleging infringement of the same patents. Generally, the plaintiff accuses satellite antennas, low-noise block converters, signal selector and combiners, and set-top boxes and the manner in which they process signals for satellite television customers of infringing the asserted patents.

On October 24, 2022, this case was ordered to be transferred to the United States District Court for the Central District of California. A companion case against DirecTV was also ordered transferred to the United States District Court for the Central District of California.

In January and February of 2023, DISH Network L.L.C. and Dish Network Service L.L.C. filed petitions with the United States Patent and Trademark Office challenging the validity of all claims of the 715 patent, all claims of the 008 patent, and 25 claims of the 576 patent, which includes all of its asserted claims.

In August and September 2023, the Patent Office denied institution on the petitions challenging the 715 patent and the 576 patent. In September 2023, at the parties’ joint request, the Patent Office dismissed the petition challenging the 008 patent, as Entropic agreed to drop its claims against DISH Network on that patent.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages. The plaintiff is an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein.

Entropic Communications, LLC (second action)

On February 10, 2023, Entropic filed a second lawsuit against our wholly-owned subsidiaries DISH Network, DISH Network L.L.C., Dish Network Service L.L.C. and Dish Network California Service Corporation in the United States District Court for the Central District of California. The complaint alleges infringement of U.S. Patent No. 7,295,518 (the “518 patent”), entitled “Broadband network for coaxial cable using multi-carrier modulation”; U.S. Patent No. 7,594,249 (the “249 patent”), entitled “Network interface device and broadband local area network using coaxial cable”; U.S. Patent Nos. 7,889,759 (the “759 patent”), entitled “Broadband cable network utilizing common bit-loading”; U.S. Patent No. 8,085,802 (the “802 Patent”), entitled “Multimedia over coaxial cable access protocol”; U.S. Patent No. 9,838,213 (the “213 patent”), entitled “Parameterized quality of service architecture in a network”; U.S. Patent No. 10,432,422 (the “422 patent”), entitled “Parameterized quality of service architecture in a network”; U.S. Patent No. 8,631,450 (the “450 patent”), entitled “Broadband local area network”; U.S. Patent No. 8,621,539 (the “539 patent”), entitled “Physical layer transmitter for use in a broadband local area network”; U.S. Patent No. 8,320,566 (the “0,566 patent”), entitled “Method and apparatus for performing constellation scrambling in a multimedia home network”; U.S. Patent No. 10,257,566 (the “7,566 patent”), entitled “Broadband local area network”; U.S. Patent No. 8,228,910 (the “910 Patent”), entitled “Aggregating network packets for transmission to a destination mode”; and U.S. Patent No. 8,363,681 (the “681 patent”), entitled “Method and apparatus for using ranging measurements in a multimedia home network.” Generally, the patents relate to Multimedia over Coax Alliance standards and the manner in which we provide a whole-home DVR network over an on-premises coaxial cable network. Entropic has asserted the same patents in the same court against Comcast, Cox and DirecTV. On September 7, 2023, the Court granted the motion of DISH Network L.L.C., Dish Network Service L.L.C. and Dish Network California Service Corporation to dismiss the claims arising from the 7,566 patent and the 910 patent on the grounds that they claimed in eligible subject matter. In January and February 2024, DISH Network L.L.C. filed petitions with the United States Patent and Trademark Office challenging the validity of the 249 patent, the 518 patent, the 759 patent, the 450 patent, the 539 patent, the ’0,566 patent, and the ’681 patent.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

Freedom Patents

On April 7, 2023, Freedom Patents LLC filed a complaint against our wholly-owned subsidiaries DISH Network, DISH Network L.L.C. and Dish Network Service L.L.C. in the United States District Court for the Eastern District of Texas. The complaint alleges infringement of U.S. Patent No. 8,284,686 (the "686 Patent"), entitled "Antenna/Beam Selection Training in MIMO Wireless LANS with Different Sounding Frames"; U.S. Patent No. 8,374,096 (the "096 Patent"), entitled "Method for Selecting Antennas and Beams in MIMO Wireless LANs"; and U.S. Patent No. 8,514,815 (the "815 Patent"), entitled "Training Signals for Selecting Antennas and Beams in MIMO Wireless LANs." Similar complaints were also filed against Acer, Altice, Charter, Comcast and Verizon. In general, the asserted patents relate to the 802.11 wireless standard, and the products accused of infringement are the Wireless Joey, its access point, and certain Ring, Nest and Linksys products that we sell.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers.

We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages. The plaintiff is an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein.

Jones 401(k) Litigation

On December 20, 2021, four former employees filed a class action complaint in the United States District Court for the District of Colorado against our wholly-owned subsidiary DISH Network, its Board of Directors, and its Retirement Plan Committee alleging fiduciary breaches arising from the management of our 401(k) Plan. The putative class, comprised of all participants in the Plan on or after January 20, 2016, alleges that the Plan had excessive recordkeeping and administrative expenses and that it maintained underperforming funds. On February 1, 2023, a Magistrate Judge issued a recommendation that the defendants' motion to dismiss the complaint be granted, and on March 27, 2023, the district court judge granted the motion. As permitted by the Court's order, the plaintiffs filed an amended complaint on April 10, 2023, which is limited to allegations regarding the alleged underperformance of the Fidelity Freedom Funds. On November 7, 2023, a Magistrate Judge issued a recommendation that the defendants' motion to dismiss the amended complaint be denied as to the duty to prudently monitor fund performance, but be granted as to the duty of loyalty and, on November 27, 2023, the district court judge entered an order adopting the recommendation.

We intend to vigorously defend this case. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

License Fee Dispute with Government of India, Department of Telecommunications

In 1994, the Government of India promulgated a "National Telecommunications Policy" under which the government liberalized the telecommunications sector and required telecommunications service providers to pay fixed license fees. Pursuant to this policy, our subsidiary Hughes Communications India Private Limited ("HCIPL"), formerly known as Hughes Escorts Communications Limited, obtained a license to operate a data network over satellite using VSAT systems. In 2002, HCIPL's license was amended pursuant to a new government policy that was first established in 1999. The new policy eliminated the fixed license fees and instead required each telecommunications service provider to pay license fees based on its adjusted gross revenue ("AGR"). In March 2005, the Indian Department of Telecommunications ("DOT") notified HCIPL that, based on its review of HCIPL's audited accounts and AGR statements, HCIPL must pay additional license fees and penalties and interest on such fees and penalties. HCIPL responded that the DOT had improperly calculated its AGR by including revenue from licensed and unlicensed activities. The DOT rejected this explanation and in 2006, HCIPL filed a petition with an administrative tribunal (the "Tribunal"), challenging the DOT's calculation of its AGR. The DOT also issued license fee assessments to other telecommunications service providers and a number of similar petitions were filed by several other such providers with the Tribunal. These petitions were amended, consolidated, remanded and re-appealed several times. On April 23, 2015, the Tribunal issued a judgment affirming the DOT's calculation of AGR for the telecommunications service providers but reversing the DOT's imposition of interest, penalties and interest on such penalties as excessive.

Over subsequent years, the DOT and HCIPL and other telecommunications service providers, respectively, filed several appeals of the Tribunal's ruling. On October 24, 2019, the Supreme Court of India ("Supreme Court") issued an order (the "October 2019 Order") affirming the license fee assessments imposed by the DOT, including its imposition of interest, penalties and interest on the penalties, but without indicating the amount HCIPL is required to pay the DOT, and ordering payment by January 23, 2020. On November 23, 2019, HCIPL and other telecommunication service providers filed a petition asking the Supreme Court to reconsider the October 2019 Order. The petition was denied on January 20, 2020. On January 22, 2020, HCIPL and other telecommunication service providers filed an application requesting that the Supreme Court modify the October 2019 Order to permit the DOT to calculate the final amount due and extend HCIPL's and the other telecommunication service providers' payment deadline. On February 14, 2020, the Supreme Court directed HCIPL and the other telecommunication service providers to explain why the Supreme Court should not initiate contempt proceedings for failure to pay the amounts due. During a hearing on March 18, 2020, the Supreme Court ordered that all amounts that were due before the October 2019 Order must be paid, including interest, penalties and interest on the penalties. The Supreme Court also ordered that the parties appear for a further hearing addressing, potentially among other things, a proposal by the DOT to allow for extended or deferred payments of amounts due. On June 11, 2020, the Supreme Court ordered HCIPL and the other telecommunication service providers to submit affidavits addressing the proposal made by the DOT to extend the time frame for payment of the amounts owed and for HCIPL and the other telecommunication providers to provide security for such payments.

On September 1, 2020, the Supreme Court issued a judgment permitting a 10-year payment schedule. Under this payment schedule, HCIPL is required to make an annual payment every March 31, through 2031. Following the Supreme Court of India's October 2019 judgment, HCIPL made payments during the first quarter of 2020, and additional payments on each March 31 thereafter. As of December 31, 2023 the gross amount of fees, penalties and interest owed was approximately $90 million with $62 million remaining outstanding as a result of historical payments.

Pursuant to the Contribution and Membership Interest Purchase Agreement (the "Purchase Agreement") dated December 3, 2004 between The DirecTV Group, Inc. ("DirecTV") and certain other entities relating to the spinoff by DirecTV of certain of its subsidiaries, including HCIPL, DirecTV undertook indemnification obligations to HCIPL, and HCIPL has pursued indemnification claims in the United States District Court for the Southern District of New York against DirecTV under the Purchase Agreement in connection with the license fees assessed in this proceeding. On June 22, 2023, the United States Court of Appeals for the Second Circuit ruled that, under the Purchase Agreement, HCIPL, is entitled to indemnification from DirecTV, with the amount of indemnification to be determined in further proceedings before the district court in New York.

Lingam Securities Class Action (formerly Jaramillo)

On March 23, 2023, a securities fraud class action complaint was filed against our wholly-owned subsidiary DISH Network and Messrs. Ergen, Carlson and Orban in the United States District Court for the District of Colorado. The complaint is brought on behalf of a putative class of purchasers of our securities during the February 22, 2021 to February 27, 2023 class period. In general, the complaint alleges that DISH Network's public statements during that period were false and misleading and contained material omissions, because they did not disclose that DISH Network allegedly maintained a deficient cyber-security and information technology infrastructure, were unable to properly secure customer data and DISH Network's operations were susceptible to widespread service outages.

In August 2023, the Court appointed a new lead plaintiff and lead plaintiff's counsel, and, on October 20, 2023, they filed an amended complaint that abandoned the original allegations. In their amended complaint, plaintiffs allege that, during the class period, the defendants concealed problems concerning the 5G network buildout that prevented scaling and commercializing the network to obtain enterprise customers. The amended complaint adds as individual defendants James S. Allen, DISH Network's Senior Vice President and Chief Accounting Officer; John Swieringa, our President, Technology and Chief Operating Officer; Dave Mayo, DISH Network's former Executive Vice President of Network Development; Marc Rouanne, DISH Network's Executive Vice President and Chief Network Officer; and Stephen Bye, DISH Network's former Executive Vice President and Chief Commercial Officer. After the defendants filed a motion to dismiss, the plaintiffs filed a further amended complaint, asserting the same theory, on February 23, 2024. The new complaint drops Erik Carlson, John Swieringa, Paul Orban and James Allen as individual defendants.

We intend to vigorously defend this case. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Realtime Data LLC and Realtime Adaptive Streaming LLC

On June 6, 2017, Realtime Data LLC d/b/a IXO ("Realtime") filed an amended complaint in the United States District Court for the Eastern District of Texas (the "Original Texas Action") against us and our wholly-owned subsidiaries DISH Network, DISH Network L.L.C., DISH Technologies L.L.C. (then known as EchoStar Technologies L.L.C.), Sling TV L.L.C., Sling Media L.L.C. and Hughes Network Systems, L.L.C. ("HNS"); and Arris Group, Inc. Realtime's initial complaint in the Original Texas Action, filed on February 14, 2017, had named only us and our wholly-owned subsidiary HNS as defendants.

The amended complaint in the Original Texas Action alleges infringement of United States Patent No. 8,717,204 (the "204 patent"), entitled "Methods for encoding and decoding data"; United States Patent No. 9,054,728 (the "728 patent"), entitled "Data compression systems and methods"; United States Patent No. 7,358,867 (the "867 patent"), entitled "Content independent data compression method and system"; United States Patent No. 8,502,707 (the "707 patent"), entitled "Data compression systems and methods"; United States Patent No. 8,275,897 (the "897 patent"), entitled "System and methods for accelerated data storage and retrieval"; United States Patent No. 8,867,610 (the "610 patent"), entitled "System and methods for video and audio data distribution"; United States Patent No. 8,934,535 (the "535 patent"), entitled "Systems and methods for video and audio data storage and distribution"; and United States Patent No. 8,553,759 (the "759 patent"), entitled "Bandwidth sensitive data compression and decompression."

Realtime alleges that our, Sling TV L.L.C.'s, Sling Media L.L.C.'s and Arris Group, Inc.'s streaming video products and services compliant with various versions of the H.264 video compression standard infringe the 897 patent, the 610 patent and the 535 patent, and that the data compression system in HNS' products and services infringes the 204 patent, the 728 patent, the 867 patent, the 707 patent and the 759 patent.

On July 19, 2017, the Court severed Realtime's claims against DISH Network, DISH Network L.L.C., Sling TV L.L.C., Sling Media L.L.C. and Arris Group, Inc. (alleging infringement of the 897 patent, the 610 patent and the 535 patent) from the Original Texas Action into a separate action in the United States District Court for the Eastern District of Texas (the "Second Texas Action"). On August 31, 2017, Realtime dismissed the claims against DISH Network, Sling TV L.L.C., Sling Media Inc., and Sling Media L.L.C. from the Second Texas Action and refiled these claims (alleging infringement of the 897 patent, the 610 patent and the 535 patent) against Sling TV L.L.C., Sling Media Inc., and Sling Media L.L.C. in a new action in the United States District Court for the District of Colorado (the "Colorado Action"). Also on August 31, 2017, Realtime dismissed DISH Technologies L.L.C. from the Original Texas Action, and on September 12, 2017, added it as a defendant in an amended complaint in the Second Texas Action. On November 6, 2017, Realtime filed a joint motion to dismiss the Second Texas Action without prejudice, which the Court entered on November 8, 2017.

On October 10, 2017, Realtime Adaptive Streaming LLC ("Realtime Adaptive Streaming") filed suit against our wholly-owned subsidiaries DISH Network L.L.C. and DISH Technologies L.L.C., as well as Arris Group, Inc., in a new action in the United States District Court for the Eastern District of Texas (the "Third Texas Action"), alleging infringement of the 610 patent and the 535 patent. Also on October 10, 2017, an amended complaint was filed in the Colorado Action, substituting Realtime Adaptive Streaming as the plaintiff instead of Realtime, and alleging infringement of only the 610 patent and the 535 patent, but not the 897 patent. On November 6, 2017, Realtime Adaptive Streaming filed a joint motion to dismiss the Third Texas Action without prejudice, which the court entered on November 8, 2017. Also on November 6, 2017, Realtime Adaptive Streaming filed a second amended complaint in the Colorado Action, adding our wholly-owned subsidiaries DISH Network L.L.C. and DISH Technologies L.L.C., as well as Arris Group, Inc., as defendants.

As a result, neither DISH Network nor any of its subsidiaries is a defendant in the Original Texas Action; the Court has dismissed without prejudice the Second Texas Action and the Third Texas Action; and our wholly-owned subsidiaries DISH Network L.L.C., DISH Technologies L.L.C., Sling TV L.L.C. and Sling Media L.L.C. as well as Arris Group, Inc., are defendants in the Colorado Action, which now has Realtime Adaptive Streaming as the named plaintiff. Following settlements with the plaintiff, we and HNS were dismissed from the Original Texas Action in February 2019, and Arris Group, Inc. was dismissed from the Colorado Action in March 2021.

On July 3, 2018, Sling TV L.L.C., Sling Media L.L.C., DISH Network L.L.C., and DISH Technologies L.L.C. filed petitions with the United States Patent and Trademark Office challenging the validity of each of the asserted patents. On January 31, 2019, the United States Patent and Trademark Office agreed to institute proceedings on DISH Network's petitions, and it held trial on the petitions on December 5, 2019. On January 17, 2020, the United States Patent and Trademark Office terminated the petitions as time-barred, but issued a final written decision invalidating the 535 patent to third parties that had timely joined in DISH Network's petition (and, on January 10, 2020, issued a final written decision invalidating the 535 patent in connection with a third party's independent petition). On March 16, 2020, Sling TV L.L.C., Sling Media L.L.C., DISH Network L.L.C., and DISH Technologies L.L.C. filed a notice of appeal from the terminated petitions to the United States Court of Appeals for the Federal Circuit. On June 29, 2020, the United States Patent and Trademark Office filed a notice of intervention in the appeal. On March 16, 2021, the Court of Appeals dismissed the appeal for lack of jurisdiction. On April 29, 2021, Sling TV L.L.C., Sling Media L.L.C., DISH Network L.L.C., and DISH Technologies L.L.C. filed a petition for rehearing, which was denied on June 28, 2021. On January 12, 2021, Realtime Adaptive Streaming filed a notice of dismissal of its claims on the 535 patent.

On July 30, 2021, the District Court granted summary judgment in favor of DISH Network L.L.C., DISH Technologies L.L.C., Sling TV L.L.C. and Sling Media L.L.C., holding that the remaining asserted patent, the 610 patent, is invalid because it claims patent-ineligible abstract subject matter. Realtime Adaptive Streaming appealed that ruling to the United States Court of Appeals for the Federal Circuit, and on May 11, 2023, that Court affirmed the District Court's summary judgment order. Independently, on September 21, 2021, in connection with an ex parte reexamination of the validity of the 610 patent, an examiner at the United States Patent and Trademark Office issued a final office action rejecting each asserted claim of the 610 patent as invalid over the cited prior art.

On April 19, 2023, the Patent Trial and Appeal Board rejected Realtime Adaptive Streaming's appeal and affirmed the examiner's rejection of the asserted claims of the 610 patent. Realtime did not further appeal the Patent Trial and Appeal Board's determination and, thus, the asserted claims of the 610 patent were canceled. As a result, DISH Network L.L.C., DISH Technologies L.L.C., Sling TV L.L.C. and Sling Media L.L.C. no longer face any possible exposure from this matter, and the liability phase of this case is concluded.

On January 21, 2022, the District Court granted the motion by DISH Network L.L.C., DISH Technologies L.L.C., Sling TV L.L.C. and Sling Media L.L.C. to have the case declared "exceptional," and on September 20, 2022, awarded them $3.9 million in attorneys' fees. Realtime Adaptive Streaming filed a notice of appeal to the United States Court of Appeals for the Federal Circuit from the exceptionality and fee award orders, and that appeal is now fully briefed and scheduled for oral argument on April 2, 2024.

SafeCast Limited

On June 27, 2022, SafeCast Limited filed a complaint against our wholly-owned subsidiary DISH Network in the United States District Court for the Western District of Texas. The complaint alleges that DISH Network infringe U.S. Patent No. 9,392,302, entitled "System for providing improved facilities in time-shifted broadcasts" (the "302 patent"). On the same day, it brought complaints in the same court asserting infringement of the same patent against AT&T, Google, HBO, NBCUniversal, Paramount and Verizon. On October 24, 2022, in response to the parties' joint motion, the Court ordered the case against DISH Network transferred to the United States District Court for the District of Colorado. On December 1, 2022, SafeCast filed an amended complaint naming our wholly-owned subsidiaries DISH Network L.L.C. and DISH Technologies L.L.C. as defendants and withdrawing the allegations as to DISH Network. On June 22, 2023, DISH Network L.L.C. and DISH Technologies L.L.C. filed a petition with the United States Patent and Trademark Office challenging the validity of the asserted claims of the 302 patent. On August 28, 2023, the Court stayed the case pending resolution of the petition.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patent, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages. The plaintiff is an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein.

Sound View Innovations, LLC

On December 30, 2019, Sound View Innovations, LLC filed one complaint against our wholly-owned subsidiaries DISH Network L.L.C. and DISH Technologies L.L.C. and a second complaint against our wholly-owned subsidiary Sling TV L.L.C. in the United States District Court for the District of Colorado. The complaint against DISH Network L.L.C. and DISH Technologies L.L.C. alleges infringement of United States Patent No 6,502,133 (the "133 patent"), entitled "Real-Time Event Processing System with Analysis Engine Using Recovery Information" and both complaints allege infringement of United States Patent No. 6,708,213 (the "213 patent), entitled "Method for Streaming Multimedia Information Over Public Networks"; United States Patent No. 6,757,796 (the "796 patent"), entitled "Method and System for Caching Streaming Live Broadcasts transmitted Over a Network"; and United States Patent No. 6,725,456 (the "456 patent"), entitled "Methods and Apparatus for Ensuring Quality of Service in an Operating System." All but the 133 patent are also asserted in the complaint against Sling TV L.L.C.

On May 21, 2020, June 3, 2020, June 5, 2020 and July 10, 2020, DISH Network L.L.C., DISH Technologies L.L.C. and Sling TV L.L.C. filed petitions with the United States Patent and Trademark Office challenging the validity of, respectively, the 213 patent, the 133 patent, the 456 patent and the 796 patent. On November 25, 2020, the United States Patent and Trademark Office declined to review the validity of the 213 patent, and on September 29, 2021, denied a request for rehearing of that decision. On January 19, 2021, the United States Patent and Trademark Office agreed to institute proceedings on the 456 patent but declined to review the 133 patent. On February 24, 2021, the United States Patent and Trademark Office agreed to institute proceedings on the 796 patent. On January 18, 2022, the United States Patent and Trademark Office issued a final written decision holding that the challenged claim of the 456 patent is patentable, and on February 8, 2022, it issued a final written decision holding that the challenged claims of the 796 patent are patentable.

On March 22, 2022, DISH Network L.L.C., DISH Technologies L.L.C. and Sling TV L.L.C. filed a notice of appeal to the United States Court of Appeals for the Federal Circuit from the adverse final written decision regarding the 456 patent, and on April 8, 2022, they filed a notice of appeal to the same court from the adverse final written decision regarding the 796 patent. The appeal on the 456 patent was voluntarily dismissed on December 6, 2022. The Federal Circuit heard oral argument on the 796 patent appeal on October 3, 2023, and affirmed the United States Patent and Trademark Office's adverse final written decision on October 5, 2023.

On April 20, 2022, DISH Network L.L.C., DISH Technologies L.L.C. and Sling TV L.L.C. filed a petition with the United States Patent and Trademark Office requesting ex parte reexamination of the validity of one of the asserted claims of the 213 patent, and reexamination was ordered on June 16, 2022. On January 18, 2023, they filed another petition requesting ex parte reexamination of the validity of the four additional asserted claims of the 213 patent, and reexamination was ordered on April 17, 2023. On November 13, 2023, the United States Patent and Trademark Office confirmed the patentability of the claim challenged in our first petition.

We intend to vigorously defend these cases. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages. The plaintiff is an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein.

State of Illinois ex rel. Rodriguez

In March 2020, two private "relators" filed this case in the Circuit Court of Cook County Illinois, County Department, Law Division, under the Illinois False Claims Act against DISH Wireless, Sprint and more than 60 Boost Mobile retailers in Illinois. The defendants only became aware of the lawsuit after it was unsealed in March 2022. The operative Second Amended Complaint alleges that the retailer defendants should have collected sales tax under the Retailers' Occupation Tax Act on any amounts that Sprint or DISH Network rebated them to facilitate handset price discounts to Illinois consumers ("Prepaid Phone Rebates") and on any phone activation fees the retailers charged to customers ("Device Setup Charges"). It further alleges that DISH Wireless and Sprint are liable for the alleged violations arising from the Device Setup Charges because of the way they allegedly managed the point-of-sale system that the retailer defendants used. The Plaintiffs seek to recover triple the amount of allegedly unpaid taxes, fines for each alleged violation, and attorneys' fees and costs. On June 13, 2023, the Court denied the defendants' motions to dismiss the complaint, but on January 2, 2024, it granted reconsideration and dismissed the complaint as to DISH Wireless and Sprint, with leave to amend. The Plaintiffs filed a Third Amended Complaint on February 2, 2024.

We intend to vigorously defend this case. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

TQ Delta, LLC

On July 17, 2015, TQ Delta, LLC ("TQ Delta") filed a complaint against our wholly-owned subsidiaries DISH Network, DISH DBS Corporation and DISH Network L.L.C. in the United States District Court for the District of Delaware. The Complaint alleges infringement of United States Patent No. 6,961,369 (the "369 patent"), which is entitled "System and Method for Scrambling the Phase of the Carriers in a Multicarrier Communications System"; United States Patent No. 8,718,158 (the "158 patent"), which is entitled "System and Method for Scrambling the Phase of the Carriers in a Multicarrier Communications System"; United States Patent No. 9,014,243 (the "243 patent"), which is entitled "System and Method for Scrambling Using a Bit Scrambler and a Phase Scrambler"; United States Patent No.7,835,430 (the "430 patent"), which is entitled "Multicarrier Modulation Messaging for Frequency Domain Received Idle Channel Noise Information"; United States Patent No. 8,238,412 (the "412 patent"), which is entitled "Multicarrier Modulation Messaging for Power Level per Subchannel Information"; United States Patent No. 8,432,956 (the "956 patent"), which is entitled "Multicarrier Modulation Messaging for Power Level per Subchannel Information"; and United States Patent No. 8,611,404 (the "404 patent"), which is entitled "Multicarrier Transmission System with Low Power Sleep Mode and Rapid-On Capability."

On September 9, 2015, TQ Delta filed a first amended complaint that added allegations of infringement of United States Patent No. 9,094,268 (the "268 patent"), which is entitled "Multicarrier Transmission System With Low Power Sleep Mode and Rapid-On Capability." On May 16, 2016, TQ Delta filed a second amended complaint that added us Corporation and our then wholly-owned subsidiary EchoStar Technologies L.L.C. as defendants. TQ Delta alleges that our satellite TV service, Internet service, set-top boxes, gateways, routers, modems, adapters and networks that operate in accordance with one or more Multimedia over Coax Alliance Standards infringe the asserted patents.

TQ Delta has filed actions in the same court alleging infringement of the same patents against Comcast Corp., Cox Communications, Inc., DirecTV, Time Warner Cable Inc. and Verizon Communications, Inc. TQ Delta is an entity that seeks to license an acquired patent portfolio without itself practicing any of the claims recited therein.
On July 14, 2016, TQ Delta stipulated to dismiss with prejudice all claims related to the 369 patent and the 956 patent. On July 20, 2016, DISH Network filed petitions with the United States Patent and Trademark Office challenging the validity of all of the patent claims of the 404 patent and the 268 patent that have been asserted against DISH Network. Third parties filed petitions with the United States Patent and Trademark Office challenging the validity of all of the patent claims that have been asserted against us in the action. On November 4, 2016, the United States Patent and Trademark Office agreed to institute proceedings on the third-party petitions related to the 158 patent, the 243 patent, the 412 patent and the 430 patent.

On December 20, 2016, pursuant to a stipulation of the parties, the Court stayed the case until the resolution of all petitions to the United States Patent and Trademark Office challenging the validity of all of the patent claims at issue. On January 19, 2017, the United States Patent and Trademark Office granted DISH Network's motions to join the instituted petitions on the 430 and 158 patents.

On February 9, 2017, the United States Patent and Trademark Office agreed to institute proceedings on DISH Network's petition related to the 404 patent, and on February 13, 2017, the United States Patent and Trademark Office agreed to institute proceedings on our petition related to the 268 patent. On February 27, 2017, the United States Patent and Trademark Office granted DISH Network's motions to join the instituted petitions on the 243 and 412 patents. On October 26, 2017, the United States Patent and Trademark Office issued final written decisions on the petitions challenging the 158 patent, the 243 patent, the 412 patent and the 430 patent, and it invalidated all of the asserted claims of those patents.

On February 7, 2018, the United States Patent and Trademark Office issued final written decisions on the petitions challenging the 404 patent, and it invalidated all of the asserted claims of that patent on the basis of DISH Network's petition. On February 10, 2018, the United States Patent and Trademark Office issued a final written decision on DISH Network's petition challenging the 268 patent, and it invalidated all of the asserted claims.

On March 12, 2018, the United States Patent and Trademark Office issued a final written decision on a third-party petition challenging the 268 patent, and it invalidated all of the asserted claims. All asserted claims have now been invalidated by the United States Patent and Trademark Office. TQ Delta filed notices of appeal from the final written decisions adverse to it. On May 9, 2019, the United States Court of Appeals for the Federal Circuit affirmed the invalidity of the 430 patent and the 412 patent. On July 10, 2019, the United States Court of Appeals for the Federal Circuit affirmed the invalidity of the asserted claims of the 404 patent. On July 15, 2019, the United States Court of Appeals for the Federal Circuit affirmed the invalidity of the asserted claims of the 268 patent. On November 22, 2019, the United States Court of Appeals for the Federal Circuit reversed the invalidity finding on the 243 patent and the 158 patent, and then, on March 29, 2020, denied a petition for panel rehearing as to those findings. On April 13, 2021, the Court lifted the stay, and the case is proceeding on the 243 patent and the 158 patent. On April 23 and April 26, 2021, the United States Patent and Trademark Office issued orders granting requests for ex parte reexamination of, respectively, the 243 patent and the 158 patent, but on July 27, 2023, the United States Patent and Trademark Office confirmed the challenged claims of the 243 patent. In a proposed supplemental report, TQ Delta's damages expert contends that TQ Delta is entitled to $251 million in damages.

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages.

Uniloc 2017 LLC

On January 31, 2019, Uniloc 2017 LLC ("Uniloc") filed a complaint against our wholly-owned subsidiary Sling TV L.L.C. in the United States District Court for the District of Colorado. The Complaint alleges infringement of United States Patent No. 6,519,005 (the "005 patent"), which is entitled "Method of Concurrent Multiple-Mode Motion Estimation for Digital Video"; United States Patent No. 6,895,118 (the "118 patent"), which is entitled "Method of Coding Digital Image Based on Error Concealment"; United States Patent No. 9,721,273 (the "273 patent"), which is entitled "System and Method for Aggregating and Providing Audio and Visual Presentations Via a Computer Network"); and United States Patent No. 8,407,609 (the "609 patent"), which is entitled "System and Method for Providing and Tracking the Provision of Audio and Visual Presentations Via a Computer Network."
On June 25, 2019, Sling TV L.L.C. filed a petition with the United States Patent and Trademark Office challenging the validity of all of the asserted claims of the 005 patent. On July 19, 2019 and July 22, 2019, respectively, Sling TV L.L.C. filed petitions with the United States Patent and Trademark Office challenging the validity of all asserted claims of the 273 patent and the 609 patent. On August 12, 2019, Sling TV L.L.C. filed a petition with the United States Patent and Trademark Office challenging the validity of all of the asserted claims of the 118 patent. On October 18, 2019, pursuant to a stipulation of the parties, the Court entered a stay of the trial proceedings.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

On January 9, 2020, the United States Patent and Trademark Office agreed to institute proceedings on the petition challenging the 005 patent. On January 15, 2020, the United States Patent and Trademark Office agreed to institute proceedings on the petition challenging the 273 patent. On February 4, 2020, the United States Patent and Trademark Office agreed to institute proceedings on the petition challenging the 609 patent. On February 25, 2020, the United States Patent and Trademark Office declined to institute proceedings on the petition challenging the 118 patent.

On December 28, 2020, the United States Patent and Trademark Office issued a final written decision upholding the validity of the challenged claims of the 273 patent. Sling TV L.L.C. appealed that decision to the United States Court of Appeals for the Federal Circuit, and on February 2, 2022, the Federal Circuit vacated the final written decision and remanded to the United States Patent and Trademark Office to reconsider its ruling. On remand, on September 7, 2022, the United States Patent and Trademark Office issued a revised final written decision finding all challenged claims of the 273 patent invalid. On November 9, 2022, Uniloc filed a notice of appeal of that revised final written decision, and briefing was completed on August 11, 2023.

On January 5, 2021, the United States Patent and Trademark Office issued a final written decision invalidating all challenged claims of the 005 patent. On January 19, 2021, the United States Patent and Trademark Office issued a final written decision invalidating all challenged claims of the 609 patent (and a second final written decision invalidating all challenged claims of the 609 patent based on a third party's petition).

We intend to vigorously defend this case. In the event that a court ultimately determines that we infringe the asserted patents, we may be subject to substantial damages, which may include treble damages, and/or an injunction that could require us to materially modify certain features that we currently offer to consumers. We cannot predict with any degree of certainty the outcome of the suit or determine the extent of any potential liability or damages. Uniloc is an entity that seeks to license an acquired patent portfolio without itself practicing any of the claims recited therein.

Vermont National Telephone Company

On September 23, 2016, the United States District Court for the District of Columbia unsealed a qui tam complaint that, on May 13, 2015, Vermont National filed against our wholly-owned subsidiaries, DISH Network, American AWS-3 Wireless I L.L.C., American II, American III, and DISH Wireless Holding L.L.C.; Charles W. Ergen (our Chairman) and Cantey M. Ergen (a member of our Board of Directors); Northstar Wireless; Northstar Spectrum; Northstar Manager; SNR Wireless; SNR HoldCo; SNR Management; and certain other parties. The complaint alleges violations of the federal civil False Claims Act (the "FCA") based on, among other things, allegations that Northstar Wireless and SNR Wireless falsely claimed bidding credits of 25% in the AWS-3 Auction when they were allegedly under the de facto control of DISH Network and, therefore, were not entitled to the bidding credits as designated entities under applicable FCC rules. Vermont National participated in the AWS-3 Auction through its wholly-owned subsidiary, VTel Wireless. The complaint was unsealed after the United States Department of Justice notified the District Court that it had declined to intervene in the action. Vermont National seeks to recover on behalf of the United States government approximately $10 billion, which reflects the $3.3 billion in bidding credits that Northstar Wireless and SNR Wireless claimed in the AWS-3 Auction, trebled under the FCA. Vermont National also seeks civil penalties of not less than $5,500 and not more than $11,000 for each violation of the FCA. On March 2, 2017, the United States District Court for the District of Columbia entered a stay of the litigation until such time as the United States Court of Appeals for the District of Columbia (the "D.C. Circuit") issued its opinion in *SNR Wireless LicenseCo, LLC, et al. v. F.C.C.* The D.C. Circuit issued its opinion on August 29, 2017 and remanded the matter to the FCC for further proceedings. See *"Commitments – DISH Network Noncontrolling Investments in the Northstar Entities and the SNR Entities Related to AWS-3 Wireless Spectrum Licenses"* above for further information.

Thereafter, the District Court maintained the stay until October 26, 2018. On February 11, 2019, the District Court granted Vermont National's unopposed motion for leave to file an amended complaint. On March 28, 2019, the defendants filed a motion to dismiss Vermont National's amended complaint, and on March 23, 2021, the District Court granted the motion to dismiss. On April 21, 2021, Vermont National filed a notice of appeal to the United States Court of Appeals for the DC Circuit and, on May 17, 2022, that court reversed the District Court's dismissal of the complaint. On June 16, 2022, the Defendants-Appellees filed a petition for rehearing or rehearing en banc, but on August 17, 2022, that petition was denied. On August 25, 2023, the FCC provided a sworn declaration stating that "the FCC considers … SNR and Northstar to have fully and timely satisfied their obligations to pay money to the Government arising from the AWS-3 Auction." On that basis, on September 22, 2023, the Defendants filed a motion seeking partial summary judgment of no damages. On September 26, 2023, the Court denied the motion as premature.

We intend to vigorously defend this case. We cannot predict with any degree of certainty the outcome of this proceeding or determine the extent of any potential liability or damages.

Other

In addition to the above actions, we are subject to various other legal proceedings and claims that arise in the ordinary course of business, including, among other things, disputes with programmers regarding fees. In our opinion, the amount of ultimate liability with respect to any of these actions is unlikely to materially affect our financial condition, results of operations or liquidity, though the outcomes could be material to our operating results for any particular period, depending, in part, upon the operating results for such period.

16. Segment Reporting

Operating segments are components of an enterprise for which separate financial information is available and regularly evaluated by the chief operating decision maker(s) of an enterprise. Operating income is the primary measure used by our chief operating decision maker to evaluate segment operating performance. We currently operate four primary business segments: (1) Pay-TV; (2) Retail Wireless; (3) 5G Network Deployment; and (4) Broadband and Satellite Services. See Note 1 for further information.

All other and eliminations primarily include intersegment eliminations related to intercompany debt and the related interest income and interest expense, which are eliminated in consolidation.

The total assets, revenue and operating income, and purchases of property and equipment, net of refunds, (including capitalized interest related to Regulatory authorizations) by segment were as follows:

	As of December 31,	
	2023	2022
	(In thousands)	
Total assets:		
Pay-TV	$ 49,437,958	$ 46,295,495
Retail Wireless	777,957	2,798,561
5G Network Deployment (1)	46,793,378	43,462,442
Broadband and Satellite Services	5,811,553	6,254,050
Eliminations (1)	(45,711,952)	(40,062,267)
Total assets	$ 57,108,894	$ 58,748,281

(1) The increase primarily resulted from intercompany advances for capital expenditures related to our 5G Network Deployment.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

	Pay-TV	Retail Wireless	5G Network Deployment	Broadband and Satellite Services	All Other & Eliminations	Consolidated Total
			(In thousands)			
Year Ended December 31, 2023						
Total revenue	$ 11,571,159	3,692,372	$ 91,928	$ 1,755,559	$ (95,420)	$ 17,015,598
Depreciation and amortization	381,292	221,968	620,685	419,262	(45,284)	1,597,923
Operating income (loss)	2,699,810	(643,184)	(1,881,369)	(458,609)	5,443	(277,909)
Interest income	2,604,599	27	3,041	105,730	(2,506,023)	207,374
Interest expense, net of amounts capitalized	(1,290,099)	(64,565)	(1,186,468)	(55,670)	2,506,445	(90,357)
Other, net	74,114	(1,793,387)	(22,603)	(29,287)	371	(1,770,792)
Income tax (provision) benefit, net	(578,739)	201,091	749,311	(74,803)	—	296,860
Net income (loss)	3,509,685	(2,300,018)	(2,338,088)	(512,639)	6,236	(1,634,824)
Year Ended December 31, 2022						
Total revenue	$ 12,505,392	$ 4,135,129	$ 65,768	$ 1,998,093	$ (70,136)	$ 18,634,246
Depreciation and amortization	428,471	177,914	131,566	462,748	(25,804)	1,174,895
Operating income (loss)	2,933,898	(77,264)	(810,968)	181,615	5,557	2,232,838
Interest income	1,872,645	5	—	50,900	(1,830,310)	93,240
Interest expense, net of amounts capitalized	(1,036,829)	(49,123)	(766,703)	(57,169)	1,830,607	(79,217)
Other, net	1,264	1,012,147	25,571	49,846	(387)	1,088,441
Income tax (provision) benefit, net	(911,955)	(219,720)	399,939	(66,674)	—	(798,410)
Net income (loss)	2,859,023	666,045	(1,152,161)	158,518	5,467	2,536,892
Year Ended December 31, 2021						
Total revenue	$ 12,928,707	$ 4,897,205	$ 73,889	$ 1,985,720	$ (66,843)	$ 19,818,678
Depreciation and amortization	538,836	176,833	23,005	496,361	(21,089)	1,213,946
Operating income (loss)	3,075,579	343,785	(216,330)	209,042	10,328	3,422,404
Interest income	1,346,502	6	—	22,801	(1,335,406)	33,903
Interest expense, net of amounts capitalized	(819,510)	(1,309)	(530,525)	(95,512)	1,335,705	(111,151)
Other, net	(2,917)	26,695	(3,221)	(15,951)	110	4,716
Income tax (provision) benefit, net	(853,363)	(95,982)	186,534	(65,626)	—	(828,437)
Net income (loss)	2,746,291	273,195	(563,542)	54,754	10,737	2,521,435

	Pay-TV	Retail Wireless	5G Network Deployment	Broadband and Satellite Services	Eliminations	Total
			(In thousands)			
Year Ended December 31, 2023						
Purchases of property and equipment, net of refunds, (including capitalized interest related to regulatory authorizations)	$ 242,736	$ —	$ 3,748,624	$ 233,423	$ —	$ 4,224,783
Year Ended December 31, 2022						
Purchases of property and equipment, net of refunds, (including capitalized interest related to regulatory authorizations)	$ 131,093	$ —	$ 3,580,518	$ 325,891	$ (2,721)	$ 4,034,781
Year Ended December 31, 2021						
Purchases of property and equipment, net of refunds, (including capitalized interest related to regulatory authorizations)	$ 173,485	$ —	$ 1,790,042	$ 438,430	$ (4,760)	$ 2,397,197

Geographic Information. Revenue is attributed to geographic regions based upon the customer billing location. Long-lived assets are associated with the geographic regions based upon the location where the asset resides. Geographic regions consist of: (i) North America, including the U.S. and its territories, Mexico, and Canada; (ii) Foreign, including South and Central America, Asia, Africa, Australia, Europe, India, and the Middle East.

The following table summarizes revenue by geographic region:

Revenue:	For the Years Ended December 31, 2023	2022	2021
		(In thousands)	
North America	$ 16,670,377	$ 18,244,417	$ 19,479,649
Foreign	345,221	389,829	339,029
Total revenue	$ 17,015,598	$ 18,634,246	$ 19,818,678

The following table summarizes long-lived assets by geographic region:

Long-lived assets:	As of December 31, 2023	2022
	(In thousands)	
North America	$ 50,965,318	$ 47,829,433
Foreign	234,944	294,962
Total long-lived assets	$ 51,200,262	$ 48,124,395

The revenue from external customers disaggregated by major revenue source was as follows:

Category:	For the Years Ended December 31, 2023	2022	2021
		(In thousands)	
Pay-TV subscriber and related revenue	$ 11,385,961	$ 12,360,601	$ 12,787,485
Retail wireless services and related revenue	3,337,240	3,653,909	4,142,883
Broadband and satellite services and other revenue	1,443,616	1,611,069	1,702,288
Pay-TV equipment sales and other revenue	185,198	144,791	141,222
Retail wireless equipment sales and other revenue	355,132	481,220	754,322
5G network deployment equipment sales and other revenue	91,928	65,768	73,889
Broadband equipment and other revenue	311,943	387,024	283,432
Eliminations	(95,420)	(70,136)	(66,843)
Total	$ 17,015,598	$ 18,634,246	$ 19,818,678

17. Revenue Recognition

Contract Balances

Our valuation and qualifying accounts as of December 31, 2023, 2022 and 2021 were as follows:

	For the Years Ended December 31, 2023	2022	2021
		(In thousands)	
Balance at beginning of period	$ 59,790	$ 53,122	$ 87,665
Current period provision for expected credit losses	101,387	112,575	76,674
Write-offs charged against allowance	(87,113)	(109,856)	(111,463)
Acquisitions	—	78	92
Foreign currency translation	326	3,871	154
Balance at end of period	$ 74,390	$ 59,790	$ 53,122

Contract assets arise when we recognize revenue for providing a service in advance of billing our customers. Our contract assets typically relate to our long-term contracts where we recognize revenue using the cost-based input method and the revenue recognized exceeds the amount billed to the customer.

Our contract assets also include receivables related to sales-type leases recognized over the lease term as the customer is billed. Contract assets are amortized as the customer is billed for services. Contract assets are recorded in “Trade accounts receivable, net” on our Consolidated Balance Sheets.

The following table summarizes our contract asset balances:

	As of	
	December 31, 2023	December 31, 2022
	(In thousands)	
Contract assets	$ 66,103	$ 73,435

Contract liabilities arise when we bill our customers and receive consideration in advance of providing the service. Contract liabilities are recognized as revenue when the service has been provided to the customer. Contract liabilities are recorded in “Deferred revenue and other” and “Long-term deferred revenue and other long-term liabilities” on our Consolidated Balance Sheets.

The following table summarizes our contract liability balances:

	As of	
	December 31, 2023	December 31, 2022
	(In thousands)	
Contract liabilities	$ 710,456	$ 802,823

Our beginning of period contract liability recorded as customer contract revenue during 2023 was $730 million.

Performance Obligations

Pay-TV and Retail Wireless Segments

We apply a practical expedient and do not disclose the value of the remaining performance obligations for contracts that are less than one year in duration, which represent a substantial majority of our revenue. As such, the amount of revenue related to unsatisfied performance obligations is not necessarily indicative of our future revenue.

Broadband and Satellite Services Segment

As of December 31, 2023, the remaining performance obligations for our customer contracts was approximately $1.740 billion. Performance obligations expected to be satisfied within one year and greater than one year are 27% and 73%, respectively. This amount and percentages exclude agreements with consumer customers.

Contract Acquisition Costs

The following table presents the activity in our contract acquisition costs, net:

	For the Years Ended December 31,		
	2023	2022	2021
		(In thousands)	
Balance at beginning of period	$ 460,876	$ 555,614	$ 567,789
Additions	321,470	400,124	460,573
Amortization expense	(431,181)	(495,456)	(471,571)
Foreign currency translation	949	594	(1,177)
Balance at end of period	$ 352,114	$ 460,876	$ 555,614

18. Quarterly Financial Data (Unaudited)

Our quarterly results of operations are summarized as follows:

	For the Three Months Ended			
	March 31	June 30	September 30	December 31
	(In thousands, except per share data)			
Year ended December 31, 2023:				
Total revenue	$ 4,387,666	$ 4,356,462	$ 4,108,874	$ 4,162,596
Operating income (loss)	353,338	252,228	(31,349)	(852,126)
Net income (loss)	272,845	232,692	(118,737)	(2,021,624)
Net income (loss) attributable to EchoStar	253,534	212,662	(138,371)	(2,029,882)
Basic net income (loss) per share attributable to EchoStar	$ 0.94	0.79	(0.51)	(7.48)
Diluted net income (loss) per share attributable to EchoStar	$ 0.82	0.69	(0.51)	(7.48)
Year ended December 31, 2022:				
Total revenue	$ 4,820,832	$ 4,698,483	$ 4,581,914	$ 4,533,017
Operating income (loss)	594,440	738,535	472,349	427,514
Net income (loss)	537,242	550,094	448,110	1,001,446
Net income (loss) attributable to EchoStar	523,534	536,314	433,608	984,264
Basic net income (loss) per share attributable to EchoStar	$ 1.93	$ 1.98	$ 1.61	$ 3.65
Diluted net income (loss) per share attributable to EchoStar	$ 1.69	$ 1.74	$ 1.41	$ 3.21

19. Acquisitions and Deconsolidations

India Joint Venture

In May 2019, we entered into an agreement with Bharti Airtel Limited (“BAL”) and its subsidiary, Bharti Airtel Services Limited (together with BAL, “Bharti”), pursuant to which Bharti agreed to contribute its very small aperture terminal (“VSAT”) telecommunications services and hardware business in India to Hughes Communications India Private Limited (“HCIPL”) and its subsidiaries, our less than wholly owned Indian subsidiaries, that conduct our VSAT services and hardware business in India. On January 4, 2022, this joint venture was formed (the “India JV”) and subsequent to the formation of the India JV, we hold a 67% ownership interest and Bharti holds a 33% ownership interest in HCIPL. The results of operations related to the India JV have been included in these Consolidated Financial Statements from the date of formation. The costs associated with the closing of the India JV were not material and were expensed as incurred. The fair value of the consideration has been assigned to customer relationship intangibles and goodwill that are recorded in “Intangible assets, net” on our Consolidated Balance Sheets.

Hughes Systique Corporation

We contract with Hughes Systique Corporation ("Hughes Systique") for software development services. In addition to our approximately 42% ownership in Hughes Systique, Mr. Pradman Kaul, the former President of our subsidiary Hughes Communications and former Vice-Chair of our Board of Directors (effective January 1, 2023), and his brother, who is the Chief Executive Officer and President of Hughes Systique, own in the aggregate approximately 25%, on an undiluted basis, of Hughes Systique's outstanding shares as of December 31, 2023. Furthermore, Mr. Pradman Kaul serves on the board of directors of Hughes Systique. Historically, Hughes Systique was considered a variable interest entity and we were considered the primary beneficiary of Hughes Systique due to, among other factors, our ability to direct the activities that most significantly impact the economic performance of Hughes Systique. As a result, we consolidated Hughes Systique's financial statements in these Consolidated Financial Statements. Upon the consummation of the Merger, Mr. Pradman Kaul will no longer remain on our Board of Directors which was a reconsideration event. Based on the entity's ability to now fund itself, among other things, we determined that Hughes Systique is no longer a variable interest entity. As a result, we have deconsolidated the Hughes Systique results from our Consolidated Financial Statements as of December 31, 2023 and recorded the investment as a cost method investment in "Other investments, net" on our Consolidated Balance Sheets. No gain or loss was recognized upon deconsolidation as the fair value of our investment in Hughes Systique approximated its carrying value. We determined the fair value of our investment in Hughes Systique based on the market approach using the guideline public company method.

20. Related Party Transactions

TerreStar Solutions

We own 40% of TSI. In May 2018, we and TSI entered into an equipment and services agreement pursuant to which we design, manufacture and install upgraded ground communications network equipment for TSI's network and provide, among other things, warranty and support services.

The table below summarizes our transactions with TSI:

	For the Years Ended December 31,		
	2023	2022	2021
		(In thousands)	
Revenue from TSI	$ 1,930	$ 1,951	$ 1,924

	As of December 31,	
	2023	2022
	(In thousands)	
Amounts receivable from TSI	$ —	$ 485

Deluxe/EchoStar LLC

We own 50% of Deluxe, a joint venture that we entered into in 2010 to build an advanced digital cinema satellite distribution network targeting delivery to digitally equipped theaters in the U.S. and Canada.

The table below summarizes our transactions with Deluxe:

	For the Years Ended December 31,		
	2023	2022	2021
		(In thousands)	
Revenue from Deluxe	$ 5,794	$ 5,334	$ 5,480

	As of December 31,	
	2023	2022
	(In thousands)	
Amounts receivable from Deluxe	$ 1,247	$ 3,026

Broadband Connectivity Solutions (Restricted) Limited

We own 20% of BCS, a joint venture that we entered into in 2018 to provide commercial Ka-band satellite broadband services across Africa, the Middle East and southwest Asia operating over Yahsat's Al Yah 2 and Al Yah 3 Ka-band satellites.

The table below summarizes our transactions with BCS:

	For the Years Ended December 31,		
	2023	2022	2021
Revenue from BCS	$ 3,426	$ 7,933	$ 8,278

	As of December 31,	
	2023	2022
	(In thousands)	
Amounts receivable from BCS	$ 3,333	$ 5,062

Hughes Systique

We own 42% of Hughes Systique and contract with Hughes Systique for software development services. Prior to December 31, 2023, we consolidated Hughes Systique's financial statements into our Consolidated Financial Statements, see Note 19 for further information. As of December 31, 2023, we have deconsolidated the Hughes Systique results from our Consolidated Financial Statements and recorded the investment as a cost method investment in "Other investments, net" on our Consolidated Balance Sheets.

The table below summarizes our transactions with Hughes Systique:

	For the Year Ended December 31, 2023
	(In thousands)
Purchases:	
Purchases from Hughes Systique	$ 19,597

	As of December 31, 2023
	(In thousands)
Amounts Payable:	
Amounts payable to Hughes Systique	$ 1,704

NagraStar L.L.C.

We own a 50% interest in NagraStar, a joint venture that is our primary provider of encryption and related security systems intended to assure that only authorized customers have access to our programming. Certain payments related to NagraStar are recorded in "Cost of services" on our Consolidated Statements of Operations and Comprehensive Income (Loss). In addition, certain other payments are initially included in "Inventory" and are subsequently capitalized as "Property and equipment, net" on our Consolidated Balance Sheets or expensed as "Selling, general and administrative expenses" or "Cost of services" on our Consolidated Statements of Operations and Comprehensive Income (Loss) when the equipment is deployed. We record all payables in "Trade accounts payable" or "Other accrued expenses" on our Consolidated Balance Sheets. Our investment in NagraStar is accounted for using the equity method.

The table below summarizes our transactions with NagraStar:

	For the Years Ended December 31,		
	2023	2022	2021
		(In thousands)	
Purchases (including fees):			
Purchases from NagraStar	$ 37,068	$ 43,416	$ 45,944

	As of December 31,	
	2023	2022
	(In thousands)	
Amounts Payable and Commitments:		
Amounts payable to NagraStar	$ 9,821	$ 7,422
Commitments to NagraStar	$ 1,727	$ 3,272

21. Subsequent Events

Asset Transfers

On January 10, 2024, DISH Network transferred certain of its wireless spectrum licenses, including AWS-4, H-Block, CBRS, C-Band - Cheyenne, 12GHz, LMDS, 24 GHz, 28 GHz, 37GHz, 39GHz and 47GHz to EchoStar Wireless Holding L.L.C., our direct wholly-owned subsidiary (the "Spectrum Transfer"). DISH Network retained ownership of certain other wireless spectrum licenses, including 600 MHz, 700 MHz, 3.45 GHz and AWS-3, of which 700 MHz and AWS-3 remain unencumbered, and DISH DBS. Prior to the Spectrum Transfer, DISH DBS designated a newly formed subsidiary of DISH Network LLC (the "DBS Subscriber Subsidiary") as an unrestricted subsidiary. DBS Subscriber Subsidiary holds approximately 3.0 million DISH TV subscribers immediately following the unrestricting of the entity.

In addition, DISH DBS, in its capacity as "Lender" under the terms of the Loan and Security Agreement related to the Intercompany Loan between DISH Network and DISH DBS, has consummated the assignment pursuant to such terms, without any modification or amendment thereto, of its receivable in respect to the 2026 Tranche to DBS Intercompany Receivable L.L.C. DBS Intercompany Receivable L.L.C. has subsequently assigned its rights as lender thereunder to EchoStar Intercompany Receivable Company L.L.C., our direct wholly-owned subsidiary, such that amounts owed in respect of the 2026 Tranche will now be paid by DISH Network to EchoStar Intercompany Receivable L.L.C.

DISH Network Exchange Offers

On January 12, 2023, we commenced offers ("the DISH Network Exchange Offers") to exchange the 0% Convertible Notes due 2025 and the 3 3/8% Convertible Notes due 2026 issued by our subsidiary DISH Network, each for 10.00% Senior Secured Notes due 2030 to be issued by us, in each case, pursuant to the terms described in a preliminary prospectus and consent solicitation statement, dated January 12, 2024. On February 12, 2024, we announced the expiration and termination of the DISH Exchange Offers.

DISH DBS Exchange Offers

On January 16, 2024, we announced our wholly-owned subsidiary DISH DBS Issuer LLC (“DBS Issuer”) commenced offers (“the DISH DBS Exchange Offers”) to eligible holders to exchange the 5 7/8% Senior Notes due 2024 (the "DBS 2024 Notes"), the 7 3/4% Senior Notes due 2026, the 7 3/8% Senior Notes due 2028 (the "DBS 2028 Notes") and the 5 1/8% Senior Notes due 2029 (the "DBS 2029 Notes," and together with the DBS 2024 Notes, the DBS 2026 Notes and the DBS 2028 Notes, the "DISH DBS Unsecured Senior Notes" issued by DISH DBS), in the amounts and subject to the terms, in each case, described in the exchange offer memorandum and consent solicitation statement, dated January 16, 2024 (the "Exchange Offer Memorandum"). On January 29, 2024, we announced our wholly-owned subsidiary DISH DBS Issuer elected in its sole discretion to terminate the DBS Exchange Offers.

Exhibit 21

EHOSTAR CORPORATION AND SUBSIDIARIES
LIST OF SUBSIDIARIES
As of December 31, 2023

Subsidiary	State or Country of Incorporation	% of Ownership		Name Doing Business As
DISH Network Corporation	Nevada	100%		DISH
DISH DBS Corporation	Colorado	100%	(1)	DDBS
DISH Network L.L.C.	Colorado	100%	(2)	DNLLC
DISH Wireless Holding L.L.C.	Colorado	100%	(1)	DISH Wireless Holding
DISH Wireless L.L.C.	Colorado	100%	(3)	DISH Wireless
Hughes Satellite Systems Corporation	Colorado	100%		HSSC
Hughes Communications, Inc.	Delaware	100%	(4)	Hughes

(1) This is a subsidiary of DISH Network Corporation
(2) This is a subsidiary of DISH DBS Corporation
(3) This is a subsidiary of DISH Wireless Holding L.L.C.
(4) This is a subsidiary of Hughes Satellite Systems Corporation

EXHIBIT 23

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the registration statements (Nos. 333-274837, 333-276339, 333-218658, 333-218657, 333-162339, 333-148416) on Form S-8 and (Nos. 333-276368, 333-276338) on Form S-3ASR of our report dated February 29, 2024, with respect to the consolidated financial statements of EchoStar Corporation and the effectiveness of internal control over financial reporting.

/s/ KPMG LLP

Denver, Colorado
February 29, 2024

EXHIBIT 24

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Dean A. Manson, individually, as the true and lawful attorney-in-fact and agent of the undersigned, with full power of substitution and resubstitution, for and in the name, place and stead of the undersigned, in any and all capacities, to sign the Annual Report on Form 10-K of EchoStar Corporation, a Nevada corporation formed in October 2007, for the year ended December 31, 2023, and any and all amendments thereto and to file the same, with all exhibits thereto and other documents in connection therewith, with the United States Securities and Exchange Commission, and hereby grants to each such attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully as to all intents and purposes as the undersigned might or could do in person, hereby ratifying and confirming all that such attorney-in-fact and agent, or his substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Power of Attorney has been signed by the following persons in the capacities and on the date indicated.

Signature	Title	Date
/s/ Charles W. Ergen Charles W. Ergen	Chairman	February 29, 2024
/s/ Kathleen Q. Abernathy Kathleen Q. Abernathy	Director	February 29, 2024
/s/ George R. Brokaw George R. Brokaw	Director	February 29, 2024
/s/ Stephen J. Bye Stephen J. Bye	Director	February 29, 2024
/s/ James DeFranco James DeFranco	Director	February 29, 2024
/s/ R. Stanton Dodge R. Stanton Dodge	Director	February 29, 2024
/s/ Cantey M. Ergen Cantey M. Ergen	Director	February 29, 2024
/s/ Lisa W. Hershman Lisa W. Hershman	Director	February 29, 2024
/s/ Tom A. Ortolf Tom A. Ortolf	Director	February 29, 2024
/s/ William D. Wade William D. Wade	Director	February 29, 2024

EXHIBIT 3.1

AMENDED AND RESTATED ARTICLES OF INCORPORATION OF

ECHOSTAR CORPORATION

ARTICLE I

Name

The name of the corporation shall be ECHOSTAR CORPORATION (the "Corporation").

ARTICLE II

Period of Duration

The Corporation shall exist in perpetuity, from and after the date of filing of its original Articles of Incorporation with the Secretary of State of the State of Nevada unless dissolved according to law.

ARTICLE III

Purposes

The purpose for which this Corporation is organized is to engage in any lawful acts and activities for which corporations may be organized under the laws of the State of Nevada and to exercise any powers permitted to corporations under the laws of the State of Nevada.

ARTICLE IV

Capital

1. Authorized Capital Stock. The total number of shares of capital stock which the Corporation is authorized to issue shall be 4,020,000,000 shares, consisting of 4,000,000,000 shares of common stock, par value $0.001 per share ("Common Stock"), and 20,000,000 shares of preferred stock, par value $0.001 per share ("Preferred Stock").

2. Common Stock. Of the 4,000,000,000 shares of authorized Common Stock, 1,600,000,000 shares shall be designated Class A Common Stock ("Class A Common Stock"), 800,000,000 shares shall be designated Class B Common Stock ("Class B Common Stock"), 800,000,000 shares shall be designated Class C Common Stock ("Class C Common Stock") and 800,000,000 shares shall be designated Class D Common Stock ("Class D Common Stock").

3. Preferred Stock. The Board of Directors of the Corporation is hereby authorized to provide, by resolution or resolutions adopted by such Board, for the issuance of Preferred Stock from time to time in one or more classes and/or series, to establish the number of shares of each such class or series, and to fix the powers, designations, preferences and relative, participating, optional or other rights, if any, and the qualifications, limitations or restrictions thereof, of any of the shares of each such class or series, all to the full extent permitted by the Nevada Revised Statutes (the "NRS"), or any successor law(s) of the State of Nevada. Without limiting the generality of the foregoing, the Board of Directors is authorized to provide that shares of a class or series of Preferred Stock:

(1) are entitled to cumulative, partially cumulative or noncumulative dividends or other distributions payable in cash, capital stock or indebtedness of the Corporation or other property, at such times and in such amounts as are set forth in the Board resolutions establishing such class or series or as are determined in a manner specified in such resolutions;

(2) are entitled to a preference with respect to payment of dividends over one or more other classes and/or series of capital stock of the Corporation;

(3) are entitled to a preference with respect to any distribution of assets of the Corporation its liquidation, dissolution or winding up over one or more other classes and/or series of capital stock of the Corporation in such amount as is set forth in the Board resolutions establishing such class or series or as is determined in a manner specified in such resolutions;

(4) are redeemable or exchangeable at the option of the Corporation and/or on a mandatory basis for cash, capital stock or indebtedness of the Corporation or other property, at such times or upon the occurrence of such events, and at such prices, as are set forth in the Board resolutions establishing such class or series or as are determined in a manner specified in such resolutions;

(5) are entitled to the benefits of such sinking fund, if any, as is required to be established by the Corporation for the redemption and/or purchase of such shares by the Board resolutions establishing such class or series;

(6) are convertible at the option of the holders thereof into shares of any other class or series of capital stock of the Corporation, at such times or upon the occurrence of such events, and upon such terms, as are set forth in the Board resolutions establishing such class or series or as are determined in a manner specified in such resolutions;

(7) are exchangeable at the option of the holders thereof for cash, capital stock or indebtedness of the Corporation or other property, at such times or upon the occurrence of such events, and at such prices, as are set forth in the Board resolutions establishing such class or series or as are determined in a manner specified in such resolutions;

(8) are entitled to such voting rights, if any, as are specified in the Board resolutions establishing such class or series (including, without limiting the generality of

the foregoing, the right to elect one or more directors voting alone as a single class or series or together with one or more other classes and/or series of Preferred Stock, if so specified by such Board resolutions) at all times or upon the occurrence of specified events; and

(9) are subject to restrictions on the issuance of additional shares of Preferred Stock of such class or series or of any other class or series, or on the reissuance of shares of Preferred Stock of such class or series or of any other class or series, or on increases or decreases in the number of authorized shares of Preferred Stock of such class or series or of any other class or series.

Without limiting the generality of the foregoing authorizations, any of the voting powers, designations, preferences, rights and qualifications, limitations or restrictions of a class or series of Preferred Stock may be made dependent upon facts ascertainable outside the Board resolutions establishing such class or series, all to the full extent permitted by the NRS. Unless otherwise specified in the Board resolutions establishing a class or series of Preferred Stock, holders of a class or series of Preferred Stock shall not be entitled to cumulate their votes in any election of directors in which they are entitled to vote and shall not be entitled to any preemptive rights to acquire shares of any class or series of capital stock of the Corporation.

ARTICLE V

Voting and Conversion Rights

1. Voting Rights.

(a) Except as otherwise required by law or, in any Preferred Stock Statement and Certificate of Designations, Preferences and Rights (“Certificate of Designations”), with respect to all matters upon which stockholders are entitled to vote or to which stockholders are entitled to give consent, the holders of any outstanding shares of Class A Common Stock, Class B Common Stock, Class C Common Stock and Preferred Stock shall vote together without regard to class, and every holder of any outstanding shares of the Class A Common Stock and Class C Common Stock shall be entitled to cast one vote in person or by proxy for each share of the Class A Common Stock and Class C Common Stock held by such holder; every holder of any outstanding shares of Class B Common Stock shall be entitled to cast ten votes in person or by proxy for each share of Class B Common Stock held by such holder; and every holder of any outstanding shares of Preferred Stock shall be entitled to cast, in person or by proxy for each share of Preferred Stock held by such holder, the number of votes specified in the applicable Certificate of Designations; provided however, in the event of a “Change in Control” of the Corporation, the holders of any outstanding shares of Class C Common Stock shall be entitled to cast ten votes in person or by proxy for each share of Class C Common Stock held by such holder. The Class D Common Stock shall be non-voting stock. As used herein, a “Change of Control” of the Corporation means: (i) any transaction or series of transactions, the result of which is that the Principals and their Related Parties (as such terms are hereinafter defined), or an entity controlled by the Principals and their Related Parties, cease to be the “beneficial owners” (as defined in Rule 13(d) (3) under the Securities Exchange Act of 1934) of at least 30% of the total equity interests of the Corporation and to have the voting power to elect at least a

majority of the Board of Directors of the Corporation; or (ii) the first day on which a majority of the members of the Board of Directors of the Corporation are not continuing directors. "Principals" means Charles W. Ergen, James DeFranco, and David K. Moskowitz. "Related Parties" means, with respect to any Principal: (y) the spouse and each immediate family member of such Principal; and (z) each trust, corporation, partnership or other entity of which such Principal beneficially holds an 80% or more controlling interest.

(b) A quorum for the purpose of shareholder meeting shall consist of a majority of the voting power of the Corporation. If a quorum is present, the effective vote of a majority of the voting power represented at the meeting and entitled to vote on the subject matter shall be the act of the shareholders, unless the vote of a greater proportion or number is required by any provisions contained in the NRS. Notwithstanding any provisions contained in the NRS requiring the vote of shares possessing two-thirds of the voting power of the Corporation to take action, absent a provision herein to the contrary, in the case of such provisions the affirmative vote of a majority of the voting power shall be the act of the shareholders.

(c) Holders of Common Stock shall not be entitled to cumulate their votes in the election of directors and shall not be entitled to any preemptive rights to acquire shares of any class or series of capital stock of the Corporation. Subject to any preferential rights of holders of Preferred Stock, holders of Common Stock shall be entitled to receive their pro rata shares, based upon the number of shares of Common Stock held by them, of such dividends or other distributions as may be declared by the Board of Directors from time to time and of any distribution of the assets of the Corporation upon its liquidation, dissolution or winding up, whether voluntary or involuntary.

2. Conversion Rights.

(a) Each share of Class B Common Stock and Class C Common Stock shall be convertible at the option of the holder thereof into Class A Common Stock of the Corporation in accordance with this Article V. In order to exercise the conversion privilege, a holder of Class B Common Stock or Class C Common Stock shall surrender the certificate evidencing such Class B Common Stock or Class C Common Stock to the Corporation at its principal office, duly endorsed to the Corporation or, in the case of uncertificated shares, instruct the Corporation's transfer agent to surrender such shares to the Corporation and, in either case, accompanied by written notice to the Corporation that the holder thereof elects to convert a specified portion or all of such shares. Class B Common Stock or Class C Common Stock converted at the option of the holder shall be deemed to have been converted on the day of surrender of the certificate representing such shares for conversion in accordance with the foregoing provisions or, in the case of uncertificated shares, on the day in which the Corporation's transfer agent receives instruction to effect a book entry transfer to the Corporation, and at such time the rights of the holder of such Class B Common Stock or Class C Common Stock, as such holder, shall cease and such holder shall be treated for all purposes as the record holder of Class A Common Stock issuable upon conversion. As promptly as practicable on or after the conversion date, the Corporation shall issue and mail or deliver to such holder a certificate or certificates for the number of Class A Common Stock issuable upon conversion or shall instruct the Corporation's transfer agent to effect a book entry transfer to reflect such Class A Common Stock issuable upon conversion, computed to the nearest one hundredth of a full share, and a certificate or

certificates or book entry transfer for the balance of Class B Common Stock or Class C Common Stock surrendered, if any, not so converted into Class A Common Stock.

(b) The Class B Common Stock and Class C Common Stock shall be convertible into one share of Class A Common Stock for each share of Class B Common Stock or Class C Common Stock so converted (the "Conversion Rate"). In the event the Corporation shall at any time subdivide or split its outstanding Class A Common Stock, into a greater number of shares or declare any dividend payable in Class A Common Stock, the Conversion Rate in effect immediately prior to such subdivision, split or dividend shall be proportionately increased, and conversely, in case the outstanding Class A Common Stock of the Corporation shall be combined into a smaller number of shares, the Conversion Rate in effect immediately prior to such combination shall be proportionately decreased.

(c) Upon any adjustment of the Conversion Rate then and in each such case the Corporation shall give written notice thereof, by first-class mail, postage prepaid, addressed to the registered holders of Class B Common Stock and Class C Common Stock at the addresses of such holders as shown on the books of the Corporation, which notice shall state the Conversion Rate resulting from such adjustment and the increase or decrease, if any, in the number of shares receivable at such price upon the conversion of Class B Common Stock or Class C Common Stock, setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based.

(d) The holders of Class B Common Stock and Class C Common Stock shall have the following rights to certain properties received by the holders of Class A Common Stock:

(i) In case the Corporation shall declare a dividend or distribution upon Class A Common Stock payable other than in cash out of earnings or surplus or other than in Class A Common Stock, then thereafter each holder of Class B Common Stock or Class C Common Stock upon the conversion thereof will be entitled to receive the number of shares of Class A Common Stock into which such Class B Common Stock or Class C Common Stock shall be converted, and, in addition and without payment therefor, the property which such holder would have received as a dividend if continuously since the record date for any such dividend or distribution such holder: (A) had been the record holder of the number of Class A Common Stock then received; and (B) had retained all dividends or distributions originating directly or indirectly from such Class A Common Stock.

(ii) If any capital reorganization or reclassification of the capital stock of the Corporation, or consolidation or merger of the Corporation with another corporation, or the sale of all or substantially all of its assets to another corporation shall be effected in such a way that holders of Class A Common Stock shall be entitled to receive stock, securities or assets with respect to or in exchange for a Class A Common, then, as a condition of such reorganization, reclassification, consolidation, merger or sale, lawful and adequate provision shall be made whereby the holders of Class B Common Stock and Class C Common

Stock shall thereafter have the right to receive, in lieu of Class A Common Stock of the Corporation immediately theretofore receivable upon the conversion of such Class B Common Stock and Class C Common Stock, such shares of stock, securities or assets as may be issued or payable with respect to or in exchange for a number of outstanding Class A Common Stock equal to the number of Class A Common Stock immediately theretofore receivable upon the conversion or such Class B Common Stock and Class C Common Stock had such reorganization, reclassification, consolidation, merger or sale not taken place, and in any such case appropriate provision shall be made with respect to the rights and interests of the holders of the Class B Common Stock and Class C Common Stock to the end that the provisions hereof (including without limitation provisions for adjustments of the Conversion Rate and of the number of shares receivable upon the conversion of such Class B Common Stock and Class C Common Stock) shall thereafter be applicable, as nearly as may be, in relation to any shares of stock, securities or assets thereafter receivable upon the conversion of such Class B Common Stock and Class C Common Stock. The Corporation shall not effect any such reorganization, reclassification, consolidation, merger or sale, unless prior to the consummation thereof the surviving corporation (if other than the Corporation), the corporation resulting from such consolidation or the corporation purchasing such assets shall assume by written instrument executed and mailed to the registered holders of the Class B Common Stock and Class C Common Stock at the last address of such holders appearing on the books of the Corporation, the obligation to deliver to such holders such shares of stock, securities or assets as, in accordance with the foregoing provisions, such holders may be entitled to receive.

(e) In case at any time:

(iii) the Corporation shall pay any dividend payable in stock upon Class A Common Stock or make any distribution (other than regular cash dividends to the holders of Class A Common Stock); or

(iv) the Corporation shall offer for subscription pro rata to the holders of Class A Common Stock any additional shares of stock of any class or other rights; or

(v) there shall be any capital reorganization, reclassification of the capital stock of the Corporation, or consolidation or merger of the Corporation with, or sale of all or substantially all of its assets, to another corporation (provided however, that this provision shall not be applicable to the merger or consolidation of the Corporation with or into another corporation if, following such merger or consolidation, the shareholders of the Corporation immediately prior to such merger or consolidation own at least 80% of the equity of the combined entity); or

(vi) there shall be a voluntary or involuntary dissolution, liquidation or winding up of the Corporation;

then, in any one or more of the aforesaid cases, the Corporation shall give written notice, by first-class mail, postage prepaid, addressed to the holders of Class B Common Stock and Class C Common Stock at the addresses of such holders as shown on the books of the Corporation, of the date on which: (A) the books of the Corporation shall close or a record shall be taken for such dividend, distribution or subscription rights; or (B) such reorganization, reclassification, consolidation, merger, sale, dissolution, liquidation or winding up shall take place, as the case may be. Such notice shall also specify the date as of which the holders of Class A Common Stock of record shall participate in such dividend, distribution, or subscription rights, or shall be entitled to exchange their Class A Common Stock for securities or other property deliverable upon such reorganization, reclassification, consolidation, merger, sale, dissolution, liquidation or winding up, as the case may be. Such written notice shall be given at least 20 days prior to the action in question and not less than 20 days prior to the record date or the date on which the Corporation's transfer books are closed in respect thereto.

ARTICLE VI

Board of Directors

The name and addresses of the first board of directors, which shall be seven (7) in number, are as follows:

NAME	ADDRESS
Charles W. Ergen	90 Inverness Circle East, Englewood, CO 80112
Michael T. Dugan	90 Inverness Circle East, Englewood, CO 80112
David K. Moskowitz	90 Inverness Circle East, Englewood, CO 80112
Carl E. Vogel	90 Inverness Circle East, Englewood, CO 80112
Stephen R. Goodbarn	90 Inverness Circle East, Englewood, CO 80112
Tom A. Ortolf	90 Inverness Circle East, Englewood, CO 80112
C. Michael Schroeder	90 Inverness Circle East, Englewood, CO 80112

The number of directors shall be increased or decreased as prescribed by the Bylaws of the Corporation.

ARTICLE VII

Right of Directors to Contract with Corporation

The following provisions are inserted for the management of the business and for the conduct of the affairs of the Corporation, and the same are in furtherance of and not in limitation of the powers conferred by law.

1. No contract or other transaction between this Corporation and one or more of its directors or any other corporation, firm, association, or entity in which one or more of its directors are directors or officers or are financially interested shall be either void or voidable solely because of such relationship or interest or solely because such directors are present at the meeting of the Board of Directors or a committee thereof which authorizes, approves or ratifies such contract or transaction or solely because their votes are counted for such purpose if:

(a) The material facts as to such relationship or interest and as to the contract or transaction are disclosed or are otherwise known to the Board of Directors or committee and the Board or committee authorizes, approves, or ratifies such contract or transaction by the affirmative vote of a majority of the disinterested directors, even though such directors are less than a quorum; or

(b) The material facts of such relationship or interest and as to the contract or transaction are disclosed or are otherwise known to the shareholders entitled to vote thereon and they authorize, approve or ratify such contract or transaction by vote or written consent; or

(c) The contract or transaction is fair and reasonable to the Corporation.

2. Common or interested directors may be counted in determining the presence of a quorum at a meeting of the Board of Directors or a committee thereof which authorizes, approves or ratifies such contract or transaction.

ARTICLE VIII

Corporate Opportunity

1. Certain Acknowledgements; Definitions. The provisions of this Article VIII shall, to the fullest extent permitted by law, delineate the doctrine of "corporate opportunities," as it applies to the Corporation, define the conduct of certain affairs of the Corporation and its Subsidiaries and the Corporation's and its Subsidiaries' directors and officers as they may involve EchoStar Communications Corporation ("EchoStar") and its Subsidiaries, and the powers, rights, duties and liabilities of the Corporation and its Subsidiaries and the Corporation's and its Subsidiaries' directors, officers and employees in connection therewith. In recognition and anticipation that (a) directors and officers of the Corporation and its Subsidiaries may serve as directors, officers and employees of EchoStar and its Subsidiaries, (b) the Corporation and its Subsidiaries, directly or indirectly, may engage and are expected to continue to engage in the same, similar or related lines of business as those engaged in by EchoStar and its Subsidiaries

and other business activities that overlap with or compete with those in which EchoStar and its Subsidiaries may engage, (c) the Corporation and its Subsidiaries may have an interest in the same areas of business opportunity as EchoStar and its Subsidiaries, (d) the Corporation and its Subsidiaries may engage in material business transactions with EchoStar and its Subsidiaries, including, without limitation, receiving services from, providing services to or being a significant customer or supplier to EchoStar and its Subsidiaries, and that the Corporation, EchoStar and/or one or more of their respective Subsidiaries may benefit from such transactions, and (e) as a consequence of the foregoing, it is in the best interests of the Corporation that the rights of the Corporation and its Subsidiaries, and the duties of any directors or officers of the Corporation or any of its Subsidiaries, be determined and delineated in respect of (x) any transactions between the Corporation and its Subsidiaries, on the one hand, and EchoStar and its Subsidiaries, on the other hand, and (y) any potential transactions or matters that may be presented to officers and directors or the Corporation and its Subsidiaries, or of which such officers or directors may otherwise become aware, which potential transactions or matters may constitute business opportunities of the Corporation or any of its Subsidiaries, and in recognition of the benefits to be derived by the Corporation and its Subsidiaries through its continued contractual, corporate and business relations with EchoStar and its Subsidiaries and of the benefits to be derived by the Corporation and its Subsidiaries by the possible service as directors or officers of the Corporation and its Subsidiaries of persons who may also serve from time to time as directors, officers and employees of EchoStar or any of its Subsidiaries, the provisions of this Article VIII shall, to the fullest extent permitted by law, regulate and define the conduct of the business and affairs of the Corporation and its Subsidiaries in relation to EchoStar and its Subsidiaries, and as such conduct and affairs may involve EchoStar's and its Subsidiaries directors, officers and employees, and the powers, rights, duties and liabilities of the Corporation and its Subsidiaries and their respective officers and directors in connection therewith and in connection with any potential business opportunities of the Corporation and its Subsidiaries. Any person purchasing or otherwise acquiring any shares of capital stock of the Corporation, or any interest therein, shall be deemed to have notice of and to have consented to the provisions of this Article VIII. For purposes of this Article VIII, "Control" and derivative terms means the possession of the power to direct or cause the direction of the management and policies of a person, whether through the possession of voting securities, by contract or otherwise; and "Subsidiary" means, with respect to any person, any other person that such first person directly or indirectly Controls. References in this Article VIII to "directors," "officers" or "employees" of any person shall be deemed to include those persons who hold similar positions or exercise similar powers and authority with respect to any such person that is a limited liability company, partnership, joint venture or other non-corporate entity or any close corporation governed directly by its stockholders.

2. Certain Agreements and Transactions Permitted. No contract, agreement, arrangement or transaction (or any amendment, modification or termination thereof) entered into between the Corporation and/or any of its Subsidiaries, on the one hand, and EchoStar and/or any of its Subsidiaries, on the other hand, before the Corporation ceased to be a wholly-owned subsidiary of EchoStar shall be void or voidable or be considered unfair to the Corporation or any of its Subsidiaries for the reason that EchoStar or any of its Subsidiaries is a party thereto, or because any directors, officers or employees of EchoStar or a Subsidiary of EchoStar are a party thereto, or because any directors, officers or employees of EchoStar or a Subsidiary of EchoStar were present at or participated in any meeting of the board of directors, or committee thereof, of

the Corporation, or the board of directors, or committee thereof, of any Subsidiary of the Corporation, that authorized the contract, agreement, arrangement or transaction (or any amendment, modification or termination thereof), or because his, her or their votes were counted for such purpose. The Corporation may from time to time enter into and perform, and cause or permit any of its Subsidiaries to enter into and perform, one or more contracts, agreements, arrangements or transactions (or amendments, modifications or supplements thereto) with EchoStar or any Subsidiary thereof pursuant to which the Corporation or a Subsidiary thereof, on the one hand, and EchoStar or a Subsidiary thereof, on the other hand, agree to engage in contracts, agreements, arrangements or transactions of any kind or nature with each other, or agree to compete, or to refrain from competing or to limit or restrict their competition, with each other, including to allocate and cause their respective directors, officers and employees (including any such persons who are directors, officers or employees of both) to allocate opportunities between, or to refer opportunities to, each other. To the fullest extent permitted by law, no such contract, agreement, arrangement or transaction (nor any such amendments, modifications or supplements), nor the performance thereof by the Corporation, EchoStar or any Subsidiary of the Corporation or EchoStar, shall be considered contrary to any fiduciary duty owed to the Corporation (or to any Subsidiary of the Corporation, or to any stockholder of the Corporation or any of its Subsidiaries) by any director or officer of the Corporation (or by any director or officer of any Subsidiary of the Corporation) who is also a director, officer or employee of EchoStar or any Subsidiary thereof. To the fullest extent permitted by law, no director or officer of the Corporation or any Subsidiary of the Corporation who is also a director, officer or employee of EchoStar or any Subsidiary thereof shall have or be under any fiduciary duty to the Corporation (or to any Subsidiary of the Corporation, or to any stockholder of the Corporation of any of its Subsidiaries) to refrain from acting on behalf of the Corporation or EchoStar, or any of their respective Subsidiaries, in respect of any such contract, agreement, arrangement or transaction or performing any such contract, agreement, arrangement or transaction in accordance with its terms and each such director or officer of the Corporation or any Subsidiary of the Corporation who is also a director, officer or employee of EchoStar or any Subsidiary thereof shall be deemed to have acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the Corporation, and shall be deemed not to have breached his or her duties of loyalty to the Corporation and their respective stockholders, and not to have derived an improper personal benefit therefrom.

3. Duties of Directors and Officers Regarding Potential Business Opportunities; No Liability for Certain Acts or Omissions. If a director or officer of the Corporation or any Subsidiary of the Corporation is offered, or otherwise acquires knowledge of, a potential transaction or matter that may constitute or present a business opportunity for the Corporation or any of its Subsidiaries (any such transaction or matter, and any such actual or potential business opportunity, a "Potential Business Opportunity"), such director or officer shall, to the fullest extent permitted by law, have no duty or obligation to refer such Potential Business Opportunity to the Corporation or any of its Subsidiaries, or to refrain from referring such Potential Business Opportunity to any other person, or to give any notice to the Corporation or any of its Subsidiaries regarding such Potential Business Opportunity (or any matter relating thereto), and such director or officer will not be liable to the Corporation or any of its Subsidiaries, as a director, officer, stockholder or otherwise, for any failure to refer such Potential Business Opportunity to the Corporation or any of its Subsidiaries, or for referring such Potential Business Opportunity to any other person, or for any failure to give any notice to the

Corporation or any of its Subsidiaries regarding such Potential Business Opportunity or any matter relating thereto, unless all of the following conditions are satisfied: (A) the Corporation has expressed an interest in such business opportunity as determined from time to time by the Corporation's Board of Directors as evidenced by resolutions appearing in the Corporation's minutes; (B) such Potential Business Opportunity was expressly offered to such director or officer solely in his or her capacity as a director or officer of the Corporation or as a director or officer of any Subsidiary of the Corporation; and (C) such opportunity relates to a line of business in which the Corporation or any Subsidiary of the Corporation is then directly engaged. In the event the preceding conditions are satisfied with respect to a particular Potential Business Opportunity, then such Potential Business Opportunity shall be offered first to the Corporation. In the event the preceding conditions are satisfied and the Corporation declines to pursue such Potential Business Opportunity, the directors, officers and other members of management of the Corporation shall be free to engage in such Potential Business Opportunity on their own and this paragraph shall not limit the right of any director, officer or other member of management of the Corporation to continue a business existing prior to the time that such area of interest is designated by the Corporation. This paragraph shall not be construed to release any employee of this Corporation (other than a director, officer or member of management) from any duties which may be owed to this Corporation.

4. Amendment of Article VIII. No alteration, amendment or repeal, or adoption of any provision inconsistent with, any provision of this Article VIII shall have any effect upon (a) any agreement between the Corporation or a Subsidiary thereof and EchoStar or a Subsidiary thereof that was entered into before such time or any transaction entered into in connection with the performance of any such agreement, whether such transaction is entered into before or after such time, (b) any transaction entered into between the Corporation or a Subsidiary thereof and EchoStar or a Subsidiary thereof before such time, (c) the allocation of any business opportunity between the Corporation or a Subsidiary thereof and EchoStar or a Subsidiary thereof before such time, or (d) any duty or obligation owed by any director or officer of the Corporation or any Subsidiary of the Corporation (or the absence of any such duty or obligation) with respect to any potential business opportunities of the Corporation or any Subsidiary of the Corporation which such director or officer was offered, or of which such director or officer otherwise became aware, before such time.

5. Renunciation. In addition to, and notwithstanding the foregoing provisions of this Article VIII, a potential transaction or business opportunity (1) that the Corporation or its Subsidiaries is not financially able, contractually permitted or legally able to undertake, or (2) that is, from its nature, not in the line of the Corporation's or its Subsidiaries' business, is of no practical advantage to the Corporation or its Subsidiaries or that is one in which the Corporation or its Subsidiaries has no interest or reasonable expectancy, shall not, in any such case, be deemed to constitute a corporate opportunity belonging to the Corporation, or any of its Subsidiaries, and the Corporation, on behalf of itself and each Subsidiary, to the fullest extent permitted by law, hereby renounces any interest therein.

6. Termination. Notwithstanding anything in these Articles of Incorporation to the contrary, the provisions of Sections 2 and 4(a)-(c) of this Article VIII shall automatically terminate, expire and have no further force and effect from and after the date on which no the Corporation director or officer is also an EchoStar director, officer or employee.

7. Deemed Notice. Any person or entity purchasing or otherwise acquiring or obtaining any interest in any capital stock of the Corporation shall be deemed to have notice and to have consented to the provisions of this Article VIII.

8. Severability. The invalidity or unenforceability of any particular provision, or part of any provision, of this Article VIII shall not affect the other provisions or parts hereof, and this Article VIII shall be enforced to the maximum extent permissible, and the remaining provisions of this Article VIII shall be unaffected thereby and will remain in full force and effect.

ARTICLE IX

Indemnification of Officers, Directors and Others

1. To the full extent permitted by the NRS, the Corporation shall indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit in proceeding, whether civil, criminal, administrative or investigative and whether formal or informal (other than an action by or in the right of the Corporation) by reason of the fact that he is or was a director, officer, employee, fiduciary or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee, fiduciary or agent of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise, against expenses (including attorneys' fees), judgments, fines an amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding, if he conducted himself in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, or conviction, or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the Corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe that his conduct was unlawful.

2. The Corporation shall indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Corporation to procure a judgment in its favor by reason of the fact that he is or was a director, officer, employee, fiduciary or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise against expenses (including attorneys fees) actually and reasonably incurred by him in connection with the defense or settlement of such action or suit if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable for negligence or misconduct in the performance of his duty to the Corporation unless and only to the extent that the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which such court shall deem proper.

3. To the extent that a director, officer, employee, fiduciary or agent of a corporation has been wholly successful on the merits or otherwise in defense of any action, suit or proceeding referred to in paragraphs 1 and 2 of this Article, or in defense of any claim, issue or matter therein, he shall be indemnified against expenses (including attorneys fees) actually and reasonably incurred by him in connection therewith.

4. Any indemnification under paragraphs 1 and 2 of this Article IX (unless ordered by a court) shall be made by the Corporation only as authorized in the specific case upon a determination that indemnification of the director, officer, employee, fiduciary or agent is proper in the circumstances because he has met the applicable standard of conduct set forth in paragraphs 1 and 2. Such determination shall be made: (1) by the Board of Directors by a majority vote of a quorum consisting of directors who were not parties to such action, suit or proceeding; or (2) if such quorum is not obtainable, or, even if obtainable a quorum of disinterested directors so directs, by independent legal counsel in a written opinion; or (3) by the shareholders.

5. Expenses (including attorneys fees) incurred in defending a civil or criminal action, suit or proceeding may be paid by the Corporation as they are incurred and in advance of the final disposition of such action, suit or proceeding as authorized in the manner provided in paragraph 4 of this Article IX upon receipt of an undertaking by or on behalf of the director, officer, employee or agent to repay such amount if it shall ultimately be determined by a final order of a court of competent jurisdiction that he or she is not entitled to be indemnified by the Corporation.

6. The Corporation shall have the power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee, fiduciary or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise, against any liability asserted against him and incurred by him in any such capacity or arising out of his status as such, whether or not the Corporation would have the power to indemnify him against such liability under the provisions of this Article IX.

7. In addition to the forgoing, the Corporation shall have the power to indemnify current or former directors, officer, employees and agents to the fullest extent provided by law.

ARTICLE X

Director Liability

To the fullest extent permitted by the NRS, as the same exists or may hereafter be amended, a director of this Corporation shall not be liable to the Corporation or its shareholders for monetary damages for breach of fiduciary duty as a director.

ARTICLE XI

Incorporator

The name and address of the sole incorporator of the Corporation is as follows: EchoStar Satellite Operating Corporation (By: R. Stanton Dodge, Executive Vice President, General Counsel and Secretary), 9601 S. Meridian Blvd., Englewood, CO 80112.

ARTICLE XII

Registered Office and Registered Agent

The address of the registered office of the Corporation is 502 East John Street, Carson City, Nevada 89706. The name of the Corporation's resident agent at that address is CSC Services of Nevada, Inc. Either the registered office or the registered agent may be changed in the manner permitted by law.

ARTICLE XIII

Exclusive Forum

To the fullest extent permitted by law, and unless the Corporation consents in writing to the selection of an alternative forum, the Eighth Judicial District Court of Clark County, Nevada shall be the sole and exclusive forum for any and all actions, suits or proceedings, whether civil, administrative or investigative or that asserts any claim or counterclaim (each, an "Action"); (1) brought in the name or right of the Corporation or on its behalf; (2) asserting a claim for breach of any fiduciary duty owed by any director, officer, employee or agent of the Corporation to the Corporation or the Corporation's stockholders; (3) arising or asserting a claim arising pursuant to any provision of Nevada Revised Statutes Chapters 78 or 92A or any provision of the Articles of Incorporation or Bylaws of the Corporation; (4) to interpret, apply, enforce or determine the validity of the Articles of Incorporation or Bylaws of the Corporation; or (5) asserting a claim governed by the internal affairs doctrine. In the event that the Eighth Judicial District Court of Clark County, Nevada does not have jurisdiction over any such Action, then any other state district court located in the State of Nevada shall be the sole and exclusive forum for such Action. In the event that no state district court in the State of Nevada has jurisdiction over any such Action, then a federal court located within the State of Nevada shall be the sole and exclusive forum for such Action.

Any person or entity purchasing or otherwise acquiring or obtaining any interest in any capital stock of the Corporation shall be deemed to have notice of and to have consented to all of the provisions of the Articles of Incorporation (including without limitation, the foregoing amendment thereto) and Bylaws of the Corporation, and any amendment to the Articles of Incorporation or the Bylaws enacted or adopted in accordance with the Articles of Incorporation, the Bylaws and applicable law.

AMENDED AND RESTATED BYLAWS

OF

ECHOSTAR CORPORATION

(effective December 28, 2023)

ARTICLE I

Principal Office and Corporate Seal

Section 1.1. Principal Office. The principal office and place of business of EchoStar Holding Corporation (the "Corporation") is presently at 100 Inverness Terrace East, Englewood, Colorado 80112.

Section 1.2. Other Offices. Other offices and places of business either within or outside Nevada or Colorado may be established from time to time by resolution of the Board of Directors or as the business of the Corporation may require. The registered office of the Corporation required by Title 7, Chapter 78 of the Nevada Revised Statutes to be maintained in Nevada may be changed from time to time by the Board of Directors.

Section 1.3. Seal. The seal of the Corporation shall have inscribed thereon the name of the Corporation and the word "Seal", and shall be in such form as may be approved by the Board of Directors or Secretary, which shall have the power to alter the same at its or his pleasure. The Corporation may use the seal by causing it, or a facsimile thereof, to be impressed or affixed or in any other manner reproduced.

ARTICLE II

Shares and Transfer Thereof

Section 2.1. Stock Certificates and Uncertificated Shares. Every holder of stock in the Corporation shall be entitled to have a certificate signed by or in the name of the Corporation by the Chief Executive Officer, the President or a Vice President, and by the Secretary or an Assistant Secretary, or their designee of the Corporation, certifying the number of shares of stock owned by him in the Corporation; provided, however, that the Corporation may authorize the issuance of uncertificated shares of some or all of any or all classes or series of the Corporation's stock. Any such issuance of uncertificated shares shall have no effect on existing certificates for shares until such certificates are surrendered to the Corporation, or on the respective rights and obligations of the Stockholders. Whenever any such certificate is countersigned or otherwise authenticated by a transfer agent or a transfer clerk and by a registrar (other than the Corporation), then a facsimile of the signatures of any corporate officers or agents, the transfer agent or transfer clerk or the

registrar of the Corporation may be printed or lithographed upon the certificate in lieu of the actual signatures. In the event that any officer or officers who have signed, or whose facsimile signatures have been used on any certificate or certificates for stock cease to be an officer or officers because of death, resignation or other reason, before the certificate or certificates for stock have been delivered by the Corporation, the certificate or certificates may nevertheless be adopted by the Corporation and be issued and delivered as though the person or persons who signed the certificate or certificates, or whose facsimile signature or signatures have been used thereon, had not ceased to be an officer or officers of the Corporation.

If the Corporation is authorized to issue more than one class of stock or more than one series of any class, the certificate shall contain a statement setting forth the office or agency of the Corporation from which Stockholders may obtain a copy of a statement or summary of the powers, designations, preferences, participating, optional, or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Except as otherwise expressly provided by law, the rights and obligations of the Stockholders shall be identical whether or not their shares of stock are represented by certificates.

Each certificate representing shares shall state the following upon the face thereof: the name of the state of the Corporation's organization, the name of the person to whom issued; the number and class of shares and the designation of the series, if any, which such certificate represents; the par value of each share, if any, represented by such certificate or a statement that the shares are without par value. Certificates of stock shall be in such form consistent with law as shall be prescribed by the Board of Directors. No certificate shall be issued until the shares represented thereby are fully paid.

Section 2.2. Record. A record shall be kept of the name of each person or other entity holding the stock of the Corporation issued, the number of shares held by each such person, the date thereof and, in the case of cancellation, the date of cancellation. The Corporation shall be entitled to treat the person or other entity in whose name shares of stock of the Corporation stand on the books of the Corporation as the absolute owner thereof, and thus a holder of record of such shares of stock, for all purposes as regards the Corporation, and the Corporation shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of any other person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Nevada.

Section 2.3. Lost, Stolen or Destroyed Stock Certificates; Issuance of New Certificates. The Corporation may issue a new certificate of stock or uncertificated shares in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the Corporation may require the owner of the lost, stolen or destroyed certificate, or such owner's legal representative, to give the Corporation a bond or other security sufficient to indemnify it against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate or uncertificated shares.

Section 2.4. Closing of Transfer Books - Record Date. For the purpose of determining Stockholders entitled to notice of or to vote at any meeting of Stockholders, or any adjournment thereof, or entitled to receive payment of any dividend, or in order to make a determination of Stockholders for any other proper purpose, the Board of Directors may provide that the stock

transfer books shall be closed for a stated period, but not to exceed in any case sixty (60) days. If the stock transfer books shall be closed for the purpose of determining Stockholders entitled to notice of, or to vote at a meeting of Stockholders, such books shall be closed for at least ten (10) days immediately preceding such meeting. In lieu of closing the stock transfer books, the Board of Directors may fix in advance a date as the record date for any such determination of Stockholders, such date in any case to be not more than sixty (60) or less than ten (10) days prior to the date on which the particular action requiring such determination of Stockholders is to be taken. If the Board of Directors does not order the stock transfer books closed, or fix in advance a record date, as above provided, then the record date for the determination of Stockholders entitled to notice of, or to vote at any meeting of Stockholders, or any adjournment thereof, or entitled to receive payment of any dividend or for the determination of Stockholders for any proper purpose shall at the close of business on the day before the day on which notice is given or, if notice is waived, at the close of business on the day prior to the date on which the particular action requiring such determination of Stockholders is to be taken.

Section 2.5. Transfer of Shares. Upon surrender to the Corporation or to a transfer agent of the Corporation of a certificate of stock duly endorsed or accompanied by proper evidence of succession, assignment or authority to transfer, and such documentary stamps as may be required by law, it shall be the duty of the Corporation to issue a new certificate to the person entitled thereto, and cancel the old certificate. Upon written notice to the Corporation or to a transfer agent of the Corporation from the holder of record of any uncertificated shares of stock requesting a registration of transfer of such uncertificated shares to another person, accompanied by proper evidence of succession, assignment or authority to transfer, and such documentary stamps as may be required by law, it shall be the duty of the Corporation to register such uncertificated shares of stock in the name of such other person on the books of the Corporation as the successor holder of record of such uncertificated shares of stock. Every such transfer of stock shall be entered on the stock book of the Corporation which shall be kept at its principal office or by its registrar duly appointed.

Section 2.6. Transfer Agents, Registrars and Paying Agents. The Board of Directors may, at its discretion, appoint one or more transfer agents, registrars and agents for making payment upon any class of stock, bond, debenture or other security of the Corporation. Such agents and registrars may be located either within or outside Nevada. They shall have such rights and duties and shall be entitled to such compensation as may be agreed.

ARTICLE III

Stockholders and Meetings Thereof

Section 3.1. Place of Meeting. Meetings of Stockholders shall be held at the principal office of the Corporation or at such other place, either within or without Nevada, as shall be determined by the Board of Directors.

Section 3.2. Annual Meeting. The annual meeting of Stockholders of the Corporation for the election of directors, and for the transaction of such other business as may properly come before the meeting, shall be held as determined by resolution of the Board of Directors. If a quorum be not present, the meeting may be adjourned from time to time, but no single adjournment shall exceed sixty (60) days. If the election of directors shall not be held at the annual meeting of Stockholders, or at any adjournment thereof, the Board of Directors shall cause the election to be held at a special meeting of Stockholders as soon thereafter as convenient.

Section 3.3. Special Meetings. Special meetings of Stockholders, for any purpose or purposes, unless otherwise prescribed by statute, may be called by the Chairman of the Board of Directors, the Chief Executive Officer, the Board of Directors, or the holders of not less than one-third (1/3) of the voting power of the Corporation. Any holder or holders of not less than one-third (1/3) of the voting power of the Corporation who desire to call a special meeting pursuant to this Article III, Section-3.3 shall notify the Chairman of the Board of Directors in writing that a special meeting of the Stockholders shall be called-and shall state the purpose of the meeting and include any information required by applicable law or these Bylaws. Within thirty (30) days after notice to the Chairman of the Board of Directors, the Chairman of the Board of Directors, the Chief Executive Officer, or the Secretary shall set the date, time and location of the Stockholders meeting. Business transacted at any special meeting shall be confined to the purposes stated in the notice thereof.

Section 3.4. Notice of Meeting. Written notice stating the place, day and hour of any annual or special meeting of Stockholders, and the purpose or purposes for which the meeting is called, shall be given not less than ten (10) days nor more than sixty (60) days before the date of the meeting, either personally by mail, or by a form of electronic transmission permitted for such purpose by applicable law and each national securities exchange upon which the Corporation's voting stock is then listed, by or at the direction of the Chairman of the Board of Directors, the Chief Executive Officer, the President (or in his absence by a Vice President), the Secretary, the Board of Directors, or the officer or persons calling the meeting, to each Stockholder of record entitled to vote at such meeting. If mailed, such notice shall be deemed to be given when deposited in the United States mail postage prepaid, directed to the Stockholder at such Stockholder's address as it appears on the records of the Corporation. If sent by electronic transmission, such notice shall be deemed to be given when sent to the Stockholder at such Stockholder's electronic address as it appears on the records of the Corporation. Failure to deliver such notice or obtain a waiver thereof shall not cause the meeting to be lost, but it shall be adjourned by the Stockholders present for a period not to exceed sixty (60) days until any deficiency to notice or waiver shall be supplied.

Section 3.5. Adjournment. When a meeting is for any reason adjourned to another time, notice will not be given of the adjourned meeting if the time and place thereof are announced at the meeting at which the adjournment is taken. At the adjourned meeting any business may be transacted which might have been transacted at the original meeting.

Section 3.6. Organization. Meetings of Stockholders shall be presided over by the Chairman of the Board of Directors, or in the absence of the Chairman of the Board of Directors, by the Vice Chairman of the Board of Directors, or in his absence by the Chief Executive Officer, or in his absence by the President, or in his absence by a Vice President, or in the absence of the foregoing persons by a chairman designated by the Board of Directors, or in the absence of such designation by a chairman elected at the meeting by a majority of the votes which all Stockholders present in person or by proxy are entitled to cast. The Secretary, or in the absence of the Secretary an Assistant Secretary, shall act as secretary of the meeting, but in the absence of the Secretary and any Assistant Secretary the chairman of the meeting may appoint any person to act as secretary of the meeting.

The order of business at each such meeting shall be as determined by the chairman of the meeting. The chairman of the meeting shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts and things as are necessary or desirable for the proper conduct of the meeting, including, without limitation, the establishment of procedures for the maintenance of order and safety, limitations on the time allotted to questions or comments on the affairs of the Corporation, restrictions on entry to such meeting after the time prescribed for the commencement thereof and the opening and closing of the voting polls.

Section 3.7. Voting Records. The officer or agent having charge of the stock transfer books for shares of the Corporation shall make, at least ten (10) days, before each meeting of Stockholders, a complete record of the Stockholders entitled to vote at such meeting or any adjournment thereof, arranged in alphabetical order, with the address of and the number of shares held by each, which record, for a period of ten (10) days prior to such meeting, shall be kept on file at the principal office of the Corporation, whether within or without Nevada, and shall be subject to inspection by any Stockholder for any purpose germane to the meeting at any time during the whole time of the meeting. The original stock transfer books shall be prima facie evidence as to who are the Stockholders entitled to examine such record or transfer books or to vote at any meeting of Stockholders.

Section 3.8. Quorum. At each meeting of Stockholders, except where otherwise provided by Title 7, Chapter 78 of the Nevada Revised Statutes or the Articles of Incorporation or these Bylaws, the holders of a majority of the voting power of stock entitled to vote on a matter at the meeting, present in person or represented by proxy, shall constitute a quorum. For purposes of the foregoing, where a separate vote by class or series is required for any matter, the holders of a majority of the voting power of such class or series, present in person or represented by proxy, shall constitute a quorum to take action with respect to that vote on that matter. Two or more classes or series of stock shall be considered a single class if the holders thereof are entitled to vote together as a single class at the meeting. In the absence of a quorum of the holders of a majority of the voting power of any class of stock entitled to vote on a matter, the holders of a majority of the voting power of such class so present or represented may adjourn the meeting of such class from time to time in the manner provided by Section 3.5 of these Bylaws until a quorum of such

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class shall be so present or represented for a period not to exceed sixty (60) days at any one adjournment. At such adjourned meeting at which a quorum shall be present or represented, any business may be transacted which might have been transacted at the meeting as originally notified. The Stockholders present at a duly organized meeting may continue to transact business until adjourned, notwithstanding the withdrawal of Stockholders so that less than a quorum remains.

Section 3.9. Proxies. A Shareholder may vote either in person or by proxy executed in writing by the Shareholder or by his duly authorized attorney in fact. No proxy shall be valid after six (6) months from the date of its execution, unless otherwise provided in the proxy.

Section 3.10. Action by Written Consent. Unless the Articles of Incorporation or these Bylaws specifically provide otherwise, any action required or permitted to be taken at a meeting of shareholders may be taken without a meeting if, before or after the action, a written consent thereto is signed by shareholders holding at least a majority of the voting power, except that if any greater proportion of voting power is required for such action at a meeting, then such greater proportion of written consents shall be required. In no instance where action is authorized by written consent need a meeting of shareholders be called or noticed.

Section 3.11. Voting. Each outstanding share, regardless of class, shall be entitled to one vote, and each fractional share shall be entitled to a corresponding fractional vote on each matter submitted to a vote at a meeting of Stockholders, except as may be otherwise provided in the Articles of Incorporation. If the Articles of Incorporation provide for more or less than one vote for any class or series of shares on any matter, every reference in these Bylaws to a majority or other proportion of stock shall refer to such a majority or other proportion of the voting power of all of the shares of those classes or series of shares. In the election of directors, each record holder of stock entitled to vote at such election shall have the right to vote in person or by proxy the number of shares owned by him, for as many persons as there are directors to be elected, and for whose election he has the right to vote unless the Articles of Incorporation otherwise provide. Cumulative voting shall not be allowed.

Section 3.12. Advance Notice of Stockholder Proposals. At any annual meeting of Stockholders, proposals by Stockholders and persons nominated for election as directors by Stockholders shall be considered only if advance notice thereof has been timely given as provided herein and such proposals or nominations are otherwise proper for consideration under applicable law and the Articles of Incorporation and Bylaws of the Corporation. To be timely, a Stockholder's notice must be delivered to, or mailed and received by, the Secretary of the Corporation at the principle office of the Corporation not less than ninety (90) nor more than one hundred twenty (120) days prior to the anniversary date of the immediately preceding annual meeting of Stockholders; provided, however that in the event the annual meeting of Stockholders is not within thirty (30) days before or after such anniversary date then notice by the Stockholder must be received not later than the tenth (10th) day following the day on which such notice of the date of the annual meeting was mailed or first publicly announced or disclosed (in a public filing or otherwise), whichever occurs first. Any Stockholder who gives notice of any such proposal shall deliver therewith the text of the proposal to be presented and a brief written statement of the reasons why such Stockholder favors the proposal and setting forth such Stockholder's name and address, the number and class of all shares of each class of stock of the Corporation beneficially owned by such Stockholder and any material interest of such Stockholder in the proposal (other

than as a stockholder). Any Stockholder desiring to nominate any person for election as a director of the Corporation shall deliver with such notice a statement in writing setting forth the name of the person to be nominated, the number and class of all shares of each class of stock of the Corporation beneficially owned by such person, the information regarding such person required by paragraphs (a), (e) and (f) of Item 401 of Regulation S-K adopted by the Securities and Exchange Commission (or the corresponding provisions of any regulation subsequently adopted by the Securities and Exchange Commission applicable to the Corporation), such person's signed consent to serve as a director of the Corporation if elected, such Stockholder's name and address and the number and class of all shares of each class of stock of the Corporation beneficially owned by such Stockholder. The chairman presiding at the meeting, in addition to making any other determinations that may be appropriate to the conduct of the meeting, shall determine whether such notice has been duly given and shall direct that proposals and nominees not be considered if such notice has not been given.

ARTICLE IV

Directors: Powers and Meetings

Section 4.1. General Powers. The business and affairs of the Corporation shall be managed by its Board of Directors, except as otherwise provided in Title 7, Chapter 78 of the Nevada Revised Statutes or the Articles of Incorporation.

Section 4.2. Performance of Duties. A director of the Corporation shall perform his duties as a director, including his duties as a member of any committee of the Board of Directors upon which he may serve, in good faith, in a manner he reasonably believes to be in the best interests of the Corporation, and with such care as an ordinarily prudent person in a like position would use under similar circumstances. In performing his duties, a director shall be entitled to rely on information, opinions, reports, or statements, including financial statements and other financial data, in each case prepared or presented by persons and groups listed in paragraphs (a), (b), and (c) of this Section 4.2; but he shall not be considered to be acting in good faith if he has knowledge concerning the matter in question that would cause such reliance to be unwarranted. A person who so performs his duties shall not have any liability by reason of being or having been a director of the Corporation. Those persons and groups upon whose information, opinions, reports, and statements a director is entitled to rely are:

(a) One or more officers or employees of the Corporation whom the director reasonably believes to be reliable and competent in the matters presented;

(b) Counsel, public accountants, or other persons as to matters which the director reasonably believes to be within such person's professional or expert competence; or

(c) A committee of the Board of Directors upon which he does not serve, duly designated in accordance with the provisions of the Articles of incorporation or the Bylaws, as to matters within its designated authority, which committee the director reasonably believes to merit confidence.

Section 4.3. Number; Tenure; Qualification; Chairman. The number of directors which shall constitute the whole Board of Directors of the Corporation shall be fixed from time to time by resolution of the Board of Directors or Stockholders (any such resolution of the Board of Directors or Stockholders being subject to any later resolution of either of them). The number of directors of the Corporation shall be not less than three (3) nor more than eleven (11) who need not be Stockholders of the Corporation or residents of the State of Nevada and who shall be elected at the annual meeting of Stockholders or some adjournment thereof, except that there need be only as many directors as there are Stockholders in the event that the outstanding shares are held of record by fewer than three (3) persons. Directors shall hold office until the next succeeding annual meeting of Stockholders or until their successors shall have been elected and shall qualify or until his earlier resignation or removal. No provision of this section shall be restrictive upon the right of the Board of Directors to fill vacancies or upon the right of Stockholders to remove Directors as is hereinafter provided. The Board of Directors may designate one director as the Chairman of the Board of Directors.

Section 4.4. Resignation. Any Director of the Corporation may resign at any time by giving written notice of his resignation to the Board of Directors, the Chief Executive Officer, the President, or the Secretary of the Corporation. Such resignation shall take effect at the date of receipt of such notice or at any later time specified therein and, unless otherwise specified therein, the acceptance of such resignation shall not be necessary to make it effective. When one or more directors shall resign from the Board of Directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective, each director so appointed to hold office during the remainder of the term of office of the resigning director or directors.

Section 4.5. Annual Meeting. The annual meeting of the Board of Directors shall be held at the same place and on the same day as the annual meeting of Stockholders, and no notice shall be required in connection therewith. The annual meeting of the Board of Directors shall be for the purpose of electing the elective officers of the Corporation and the transaction of such other business as may come before the meeting.

Section 4.6. Regular Meetings. Regular meetings of the Board of Directors may be held at such places within or without Nevada and at such times as the Board of Directors may from time to time determine, and if so determined notice thereof need not be given.

Section 4.7. Special Meetings. Special meetings of the Board of Directors may be called at any time by the Chairman of the Board of Directors, the Vice Chairman of the Board of Directors, the Chief Executive Officer, or by any two (2) directors, and may be held within or outside the State of Nevada at such time and place as the notice or waiver thereof may specify. Notice of such meetings shall be mailed to the last known address of each director at least five (5) days, or shall be given to a director in person or by telephone, facsimile or email at least forty-eight (48) hours prior to the date or time fixed for the meeting. Special meetings of the Board of Directors may be held at any time that all directors are present in person, and presence of any director at a meeting shall constitute waiver of notice of such meeting, except as otherwise provided by law. Unless specifically required by law, the Articles of Incorporation or these

Bylaws, neither the business to be transacted at, nor the purpose of, any meeting of the Board of Directors need be specified in the notice or waiver of notice of such meeting.

Section 4.8. Meetings by Telephone. Members of the Board of Directors or any committee designated by the Board of Directors may participate in a meeting of the Board of Directors or committee by means of telephone conference or similar communications equipment by which all persons participating in the meeting can hear each other at the same time. Such participation shall constitute presence in person at the meeting.

Section 4.9. Quorum. A quorum at all meetings of the Board of Directors shall consist of a majority of the number of directors then holding office, but a smaller number may adjourn from time to time without further notice, until a quorum be secured. The act of the majority of the directors present at a meeting at which a quorum is present shall be the act of the Board of Directors, unless the act of a greater number is required by Title 7, Chapter 78 of the Nevada Revised Statutes, the Articles of Incorporation or these Bylaws.

Section 4.10. Manner of Acting. If a quorum is present, the affirmative vote of a majority of the directors present at the meeting and entitled to vote on that particular matter shall be the act of the Board of Directors, unless the vote of a greater number is required by law or the Articles of Incorporation.

Section 4.11. Action by Written Consent. Unless the Articles of Incorporation or these Bylaws specifically provide otherwise, any action required or permitted to be taken at a meeting of the Board of Directors, or any committee designated by such board may be taken without a meeting if the action is evidenced by one or more written consents describing the action taken, signed by each director or committee member, and delivered to the Secretary for inclusion in the minutes or for filing with the corporate records. Action taken under this section is effective when all directors or committee members have signed the consent, unless the consent specifies a different effective date. Such consents shall have the same force and effect as a unanimous vote of the directors or committee members and may be stated as such in any document.

Section 4.12. Vacancies. Any vacancy occurring in the Board of Directors may be filled by the affirmative vote of a majority of the remaining directors, though less than a quorum of the Board of Directors. A director elected or appointed to fill a vacancy shall be elected or appointed for the unexpired term of his predecessor in office, and shall hold such office until his successor is fully elected and shall qualify or until his earlier resignation or removal. Any directorship to be filled by reason of an increase in the number of directors shall be filled by the affirmative vote of a majority of the directors then in office, which may be less than a quorum, or by an election at an annual meeting, or at a special meeting, of Stockholders called for that purpose. Any director elected or appointed to fill a vacancy shall hold office until the next annual meeting of Stockholders and until his successor shall have been elected and shall qualify or until his earlier resignation or removal.

Section 4.13. Compensation. Unless otherwise restricted by the Articles of Incorporation or these Bylaws, directors may receive fees, compensation, and expense reimbursement as may be established by appropriate resolution of the Board of Directors for service on the Board of

Directors and its committees, including without limitation attendance at and travel to meetings of the Board of Directors and its committees.

Section 4.14. Committees. The Board of Directors may by resolution designate one or more directors to constitute one or more committees which each shall have and may exercise all authority in the management of the Corporation as the Board of Directors to the extent provided in such resolution for such committee; but no such committee shall have the authority of the Board of Directors in reference to amending the Articles of Incorporation, adopting a plan of merger or consolidation, recommending to the Stockholders the sale, lease, exchange, or other disposition of all or substantially all of the property and assets of the Corporation otherwise than in the usual and regular course of its business, recommending to the Stockholders a voluntary dissolution of the Corporation or a revocation thereof, or amending the Bylaws of the Corporation. The Board of Directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. Unless the Board of Directors appoints alternative members pursuant to this bylaw, the member or members thereof present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any absent or disqualified member of the committee. The designation of such committees and the delegation thereto of authority shall not operate to relieve the Board of Directors, or any member thereof, of any responsibility imposed by law. Each member of the Board of Directors, whether or not such director is a member of such committees, shall be entitled to receive notice of each meeting of each committee of the Board of Directors and each member of the Board of Directors shall be entitled to attend each meeting of any such committee, whether or not such director is a member of such committee.

Section 4.15. Committee Rules. Unless the Board of Directors otherwise provides and subject to Section 4.1 of these Bylaws, a majority of the entire authorized number of members of such committee shall constitute a quorum for the transaction of business, the vote of a majority of the members present at a meeting at the time of such vote if a quorum is then present shall be the act of such committee, and in other respects each committee shall conduct its business in the same manner as the Board of Directors conducts its business pursuant to this Article IV of these Bylaws.

Section 4.16. Removal. The Stockholders may, at a meeting called for the express purpose of removing directors, by the vote of Stockholders representing not less than two-thirds of the voting power of the issued and outstanding stock entitled to voting power, remove the entire Board of Directors or any lesser number, with or without cause.

Section 4.17. Organization. Meetings of the Board of Directors shall be presided over by the Chairman of the Board of Directors, or in his absence by the Vice Chairman of the Board of Directors, or in his absence by Chief Executive Officer, or in his absence by a chairman chosen at the meeting by a majority of the directors present at the meeting.

ARTICLE V

Officers

Section 5.1. Officers; Election; Term of Office. The elective officers of the Corporation shall be a Chief Executive Officer, a President, any number of Vice Presidents, a Secretary, any number of Assistant Secretaries, a Treasurer and any number of Assistant Treasurers, who shall be elected annually by the Board of Directors at its annual meeting. Unless removed in accordance with the procedures established by law and these Bylaws or unless provided in the resolution of the Board of Directors electing any officer, the said officers shall serve until the next succeeding annual meeting of the Board of Directors and until their respective successors are elected and shall qualify or until their earlier resignation or removal. Any two or more offices may be held by the same person at the same time. The officers of the Corporation shall be natural persons of the age of eighteen (18) years or older. The Board of Directors may elect or appoint such other officers and agents as it may deem advisable, who shall hold office during the pleasure of the Board of Directors, and shall be paid such compensation as may be directed by the Board of Directors.

Section 5.2. Powers and Duties. The officers of the Corporation shall respectively exercise and perform the respective powers, duties and functions as are stated below, and as may be assigned to them by the Board of Directors, not inconsistent with these Bylaws.

(a) Chief Executive Officer. The Chief Executive Officer shall, subject to the control of the Board of Directors, have the ultimate responsibility for the management and control of the affairs and business of the Corporation, and shall perform all duties and have all powers which are commonly incident to the office of Chief Executive Officer or which are delegated to him by the Board of Directors or as may be provided by law. In the absence of the Chairman of the Board of Directors and the Vice Chairman of the Board of Directors, he shall preside at all meetings of Stockholders and of the Board of Directors at which he shall be present.

(b) President. The President shall, subject to the control of the Board of Directors and the Chief Executive Officer, have general supervision, direction and control of the business and officers of the Corporation. In the absence of the Chairman of the Board of Directors, the Vice Chairman of the Board of Directors and the Chief Executive Officer, he shall preside at all meetings of the Stockholders and of the Board of Directors at which he shall be present. The Chief Executive Officer, the President, a Vice President, the Secretary or an Assistant Secretary, unless some other person is specifically authorized by the Board of Directors, shall sign all bonds, deeds, mortgages, leases and contracts of the Corporation. The President shall perform all the duties commonly incident to his office and such other duties as the Board of Directors, the Chairman of the Board of Directors or the Chief Executive Officer shall designate or as may be provided by law.

(c) Vice President. In the absence or disability of the President, or at the Chief Executive Officer's or President's request, the Vice President or Vice Presidents, in order of their rank as fixed by the Board of Directors, and if not ranked, the Vice Presidents in the order designated by the Board of Directors, or, in the absence of such designation, in the order designated by the Chief Executive Officer or the President, shall perform all the

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duties of the President, and when so acting, shall have all the powers of, and be subject to all the restrictions on the President. Each Vice President shall have such other powers and perform such other duties as may from time to time be assigned to him by the Board of Directors, the Chairman of the Board of Directors, the Chief Executive Officer or the President or as may be provided by law.

(d) Secretary. The Secretary shall keep accurate minutes of all meetings of the Stockholders, the Board of Directors and any committees. He shall keep, or cause to be kept, a register of the Stockholders of the Corporation and shall be responsible for the giving of notice of meetings of the Stockholders, the Board of Directors and any committees, and shall see that all notices are duly given in accordance with the provisions of these Bylaws or as required by law. The Secretary shall be custodian of the records and of the seal of the Corporation and shall attest the affixing of the seal of the Corporation when so authorized. The Secretary shall perform all duties commonly incident to his office and such other duties as may from time to time be assigned to him by the Board of Directors, the Chairman of the Board of Directors, the Chief Executive Officer or the President or as may be provided by law.

(e) Assistant Secretary. An Assistant Secretary may, at the request of the Secretary, or in the absence or disability of the Secretary, perform all the duties of the Secretary. He shall perform such other duties as may assigned to him by the Board of Directors, the Chairman of the Board of Directors, the Chief Executive Officer, the President or the Secretary or as may be provided by law.

(f) Treasurer. The Treasurer, subject to the order of the Board of Directors, shall have the care and custody of the money, funds, securities, receipts, valuable papers and documents of the Corporation. The Treasurer shall keep accurate books of accounts of the Corporation's transactions, which shall be the property of the Corporation, and shall render financial reports and statements of condition of the Corporation when so requested by the Board of Directors, the Chairman of the Board of Directors, the Chief Executive Officer or the President. The Treasurer shall perform all duties commonly incident to his office and such other duties as may, from time to time, be assigned to him by the Board of Directors, the Chairman of the Board of Directors, the Chief Executive Officer or the President or as may be provided by law.

(g) Assistant Treasurer. An Assistant Treasurer may, at the request of the Treasurer, or in the absence or disability of the Treasurer, perform all of the duties of the Treasurer. He shall perform such other duties as may be assigned to him by the Board of Directors, the Chairman of the Board of Directors, the Chief Executive Officer, the President or the Treasurer or as may be provided by law.

(h) Other Officers. The other officers, if any, of the Corporation shall have such powers and duties in the management of the Corporation as shall be stated in a resolution of the Board of Directors which is not inconsistent with these Bylaws and, to the extent not so stated, as generally pertain to their respective offices, subject to the control of the Board of Directors. The Board of Directors may require any officer, agent or employee to give security for the faithful performance of his duties.

Section 5.3. Salaries. All officers of the Corporation may receive salaries or other compensation if so ordered and fixed by the Board of Directors. The Board of Directors shall have the authority to fix salaries in advance for stated periods or render the same retroactive as the Board of Directors may deem advisable.

Section 5.4. Inability to Act. In the event of absence or inability of any officer to act, the Board of Directors may delegate the power or duties of such officer to any other officer, director or person whom it may select.

Section 5.5. Resignation; Removal; Vacancies. Any officer or agent may resign at any time upon written notice to the Board of Directors, the Chief Executive Officer, the President or the Secretary of the Corporation. Such resignation shall take effect at the time specified therein, and unless otherwise specified therein no acceptance of such resignation shall be necessary to make it effective. Any officer or agent may be removed by the Board of Directors whenever, in its judgment, the best interest of the Corporation will be served thereby, but such removal shall be without prejudice to the contract rights, if any, of the person so removed. Election or appointment of an officer or agent shall not, of itself, create contract rights. Any vacancy occurring in any office of the Corporation by death, resignation, removal or otherwise may be filled by the Board or Directors at any regular or special meeting.

ARTICLE VI

Finance

Section 6.1. Reserve Fund. The Board of Directors, in its uncontrolled discretion, may set aside from time to time, out of the net profits or earned surplus of the Corporation, such sum or sums as it deems expedient as a reserve fund to meet contingencies, for equalizing dividends, for maintaining any property of the Corporation, and for any other purposes.

Section 6.2. Checks and Deposits. The monies of the Corporation shall be deposited in the name of the Corporation in such bank or banks or trust companies, as the Board of Directors shall designate, and may be drawn out only on checks signed in the name of the Corporation by such person or persons as the Board of Directors by appropriate resolution may direct. Notes and commercial paper, when authorized by the Board of Directors, shall be signed in the name of the Corporation by such officer or officers or agent or agents as shall thereto be authorized from time to time.

Section 6.3. Fiscal Year. The fiscal year of the Corporation shall end on December 31 of each year or shall be as otherwise determined by resolution of the Board of Directors.

ARTICLE VII

Bankruptcy/Insolvency

The Corporation shall not, without the affirmative vote of the whole Board of Directors of the Corporation, institute any proceedings to adjudicate the Corporation a bankrupt or insolvent, consent to the institution of bankruptcy or insolvency proceedings against the Corporation, file a petition seeking or consenting to reorganization or relief under any applicable federal or state law relating to bankruptcy, consent to the appointment of a receiver, liquidator, assignee, trustee, sequestrator (or other similar official) of the Corporation or a substantial part of its property or admit its inability to pay its debts generally as they become due or authorize any of the foregoing to be done or taken on behalf of the Corporation.

ARTICLE VIII

Waiver of Notice

With any notices required by law or under the Articles of Incorporation or these Bylaws to be given to any Stockholder or director of the Corporation, a waiver thereof in writing signed by the person entitled to such notice, whether before, at, or after the time stated therein, shall be the equivalent to the giving of such notice.

ARTICLE IX

Indemnification of Directors, Officers and Others

Section 9.1. To the full extent permitted by Title 7, Chapter 78 of the Nevada Revised Statutes, Section 7502, as the same may be amended from time to time, the Corporation shall indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative, or investigative and whether formal or informal (other than an action by or in the right of the Corporation) by reason of the fact that he is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorney's fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if he conducted himself in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Corporation and, with respect to any criminal action or proceedings, had no reasonable cause to believe his conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, or conviction, or upon a plea of nolo contendere or its equivalent, shall not of itself create a presumption that the person did not act in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the

Corporation and, with respect to any criminal action or proceeding, had reasonable cause to believe that his conduct was unlawful.

Section 9.2. The Corporation shall indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Corporation to procure a judgment in its favor by reason of the fact that he is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as director, officer, employee or agent of another corporation, partnership, joint venture, trust, or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by him in connection with the defense or settlement of such action or suit if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interest of the Corporation, except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable for negligence or misconduct in the performance of his duty to the Corporation unless and only to the extent that the Court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which such court shall deem proper.

Section 9.3. To the extent that a director, officer, or employee or agent of the Corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in Sections 9.1 and 9.2 of this Article IX, or in defense of any claim, issue or matter therein, he shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by him in connection therewith.

Section 9.4. Any indemnification under Section 9.1 and 9.2 of this Article IX (unless ordered by a Court) shall be made by the Corporation only as authorized in the specific case upon a determination that indemnification of the office, director and employee or agent is proper in the circumstances because he has met the applicable standard of conduct set forth in Section 9.1 and 9.2 of this Article IX. Such determination shall be made (a) by the Board of Directors by a majority vote of a quorum consisting of directors who were not parties to such action, suit or proceeding, or (b) if a quorum of disinterested directors so directs, by independent legal counsel in a written opinion, or (c) by the affirmative vote of the holders of a majority of the shares entitled to vote and represented at a meeting called for such purpose.

Section 9.5. Expenses (including attorneys fees) incurred in defending a civil or criminal action, suit or proceeding may be paid by the Corporation as they are incurred and in advance of the final disposition of such action, suit or proceeding as authorized by the Board of Directors as provided in Section 9.4 of this Article IX upon receipt of an undertaking by or on behalf of the director, officer, employee or agent to repay such amount if it shall ultimately be determined by a final order of a court of competent jurisdiction that he or she is not entitled to be indemnified by the Corporation as authorized in this Article IX.

Section 9.6. The Board of Directors may exercise the Corporation's power to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against him and incurred by him in any such capacity, or arising out

of his status as such, whether or not the Corporation would have the power to indemnify him against such liability hereunder or otherwise.

Section 9.7. The indemnification provided by this Article IX shall not be deemed exclusive of any other rights to which those seeking indemnification may be entitled under the Articles of Incorporation, these Bylaws, agreement, vote or shareholders or disinterested directors, Title 7, Chapter 78 of the Nevada Revised Statutes, or otherwise, both as to action in his official capacity and as to action in another capacity while holding such office, and shall continue as to a person who has ceased to be a director, officer, employee or agent and representatives of such person.

Section 9.8. The Corporation shall have the power to indemnify current or former directors, officers, employees and agents to the fullest extent provided by the laws of the State of Nevada.

ARTICLE X

Amendments

These Bylaws may be amended or repealed, and new Bylaws may be adopted, at the annual meeting of the Board of Directors or at any regular or special meeting of the Board of Directors.

ARTICLE XI

Miscellaneous

Section 11.1. Loans. The Corporation may loan money to, guarantee the obligations of and otherwise assist directors, officers and employees of the Corporation, or directors of another corporation of which the Corporation owns a majority of the voting stock, only upon compliance with the requirements of Title 7, Chapter 78 of the Nevada Revised Statutes.

No loans shall be contracted on behalf of the Corporation and no evidence of indebtedness shall be issued in its name unless authorized by resolution of the Board of Directors. Such activity may be general or confined to specific instances.

Section 11.2. Contracts. The Board of Directors may authorize any officer or officers, agent or agents to enter into any contract or execute and deliver any instrument in the name of and on behalf of the Corporation. Such authority may be general or confined to specific instances.

/s/ Dean A. Manson
Dean A. Manson
Chief Legal Officer
and Secretary

Confidential and Proprietary

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

Section 302 Certification

I, Hamid Akhavan, certify that:

1. I have reviewed this Annual Report on Form 10-K of EchoStar Corporation;

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(s) 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(s) 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 (or persons performing the equivalent functions):

   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 29, 2024

/s/ Hamid Akhavan

President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
Section 302 Certification

I, Paul W. Orban, certify that:

1. I have reviewed this Annual Report on Form 10-K of EchoStar Corporation;

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(s) 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(s) 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 (or persons performing the equivalent functions):

   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 29, 2024

/s/ Paul W. Orban
Principal Financial Officer

EXHIBIT 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

Section 906 Certification

Pursuant to 18 U.S.C. § 1350, the undersigned officer of EchoStar Corporation (the "Company") hereby certifies that to the best of his knowledge the Company's Annual Report on Form 10-K for the year ended December 31, 2023 (the "Report") fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 29, 2024

Name: */s/ Hamid Akhavan*

Title: President and Chief Executive Officer

The foregoing certification is being furnished solely pursuant to 18 U.S.C. § 1350 and is not being filed as part of the Report or as a separate disclosure document.

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

EXHIBIT 32.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER

Section 906 Certification

Pursuant to 18 U.S.C. § 1350, the undersigned officer of EchoStar Corporation (the "Company") hereby certifies that to the best of his knowledge the Company's Annual Report on Form 10-K for the year ended December 31, 2023 (the "Report") fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 29, 2024

Name: */s/ Paul W. Orban*

Title: Principal Financial Officer

The foregoing certification is being furnished solely pursuant to 18 U.S.C. § 1350 and is not being filed as part of the Report or as a separate disclosure document.

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

ECHOSTAR CORPORATION
POLICY FOR THE
RECOVERY OF ERRONEOUSLY AWARDED COMPENSATION

A. OVERVIEW

In accordance with the applicable rules of The Nasdaq Stock Market (the "**Nasdaq Rules**"), Section 10D and Rule 10D-1 of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**") ("**Rule 10D-1**"), the Board of Directors (the "**Board**") of EchoStar Corporation (the "**Company**") has adopted this Policy (the "**Policy**") to provide for the recovery of erroneously awarded Incentive-based Compensation from Executive Officers. All capitalized terms used and not otherwise defined herein shall have the meanings set forth in Section H, below.

B. RECOVERY OF ERRONEOUSLY AWARDED COMPENSATION

(1) In the event of an Accounting Restatement, the Company will reasonably promptly recover the Erroneously Awarded Compensation Received in accordance with Nasdaq Rules and Rule 10D-1, as follows:

a. After an Accounting Restatement, the Executive Compensation Committee (if composed entirely of independent directors, or in the absence of such a committee, a majority of independent directors serving on the Board) (the "***Committee***") shall determine the amount of any Erroneously Awarded Compensation Received by each Executive Officer and shall promptly notify each Executive Officer with a written notice containing the amount of any Erroneously Awarded Compensation and a demand for repayment or return of such compensation, as applicable.

For Incentive-based Compensation based on (or derived from) the Company's stock price or total shareholder return, where the amount of Erroneously Awarded Compensation is not subject to mathematical recalculation directly from the information in the applicable Accounting Restatement:

i. The amount to be repaid or returned shall be determined by the Committee based on a reasonable estimate of the effect of the Accounting Restatement on the Company's stock price or total shareholder return upon which the Incentive-based Compensation was Received; and

ii. The Company shall maintain documentation of the determination of such reasonable estimate and provide the relevant documentation as required to Nasdaq.

b. The Committee shall have discretion to determine the appropriate means of recovering Erroneously Awarded Compensation reasonably promptly based on the particular facts and circumstances. Notwithstanding the foregoing, except as set forth in Section B(2) below, in no event may the Company accept an amount that is less than the amount of Erroneously Awarded Compensation in satisfaction of an Executive Officer's obligations hereunder.

c. To the extent that the Executive Officer has already reimbursed the Company for any Erroneously Awarded Compensation Received under any duplicative recovery obligations established by the Company or applicable law, it shall be appropriate for any such reimbursed amount to be credited to the amount of Erroneously Awarded Compensation that is subject to recovery under this Policy.

d. To the extent that an Executive Officer fails to repay all Erroneously Awarded Compensation to the Company when due, the Company shall take all actions reasonable and appropriate to recover such Erroneously Awarded Compensation from the applicable

Executive Officer. The applicable Executive Officer shall be required to reimburse the Company for any and all expenses reasonably incurred (including legal fees) by the Company in recovering such Erroneously Awarded Compensation in accordance with the immediately preceding sentence.

(2) Notwithstanding anything herein to the contrary, the Company shall not be required to take the actions contemplated by Section B(1) above if the Committee determines that recovery would be impracticable *and* any of the following two conditions are met:

a. The Committee has determined that the direct expenses paid to a third party to assist in enforcing the Policy would exceed the amount to be recovered. Before making this determination, the Company must make a reasonable attempt to recover the Erroneously Awarded Compensation, document such attempt(s) and provide such documentation to Nasdaq; or

b. Recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company, to fail to meet the requirements of Section 401(a)(13) or Section 411(a) of the Internal Revenue Code of 1986, as amended, and regulations thereunder.

C. DISCLOSURE REQUIREMENTS

The Company shall file all disclosures with respect to this Policy required by applicable U.S. Securities and Exchange Commission ("SEC") filings and rules.

D. PROHIBITION OF INDEMNIFICATION

The Company shall not be permitted to insure or indemnify any Executive Officer against (i) the loss of any Erroneously Awarded Compensation that is repaid, returned or recovered pursuant to the terms of this Policy, or (ii) any claims relating to the Company's enforcement of its rights under this Policy. Further, the Company shall not enter into any agreement that exempts any Incentive-based Compensation that is granted, paid or awarded to an Executive Officer from the application of this Policy or that waives the Company's right to recovery of any Erroneously Awarded Compensation, and this Policy shall supersede any such agreement (whether entered into before, on or after the Effective Date of this Policy).

E. ADMINISTRATION AND INTERPRETATION

This Policy shall be administered by the Committee, and any determinations made by the Committee shall be final and binding on all affected individuals.

The Committee is authorized to interpret and construe this Policy and to make all determinations necessary, appropriate, or advisable for the administration of this Policy and for the Company's compliance with Nasdaq Rules, Section 10D, Rule 10D-1 and any other applicable law, regulation, rule or interpretation of the SEC or Nasdaq promulgated or issued in connection therewith.

F. AMENDMENT; TERMINATION

The Committee may amend this Policy from time to time in its discretion and shall amend this Policy as it deems necessary. Notwithstanding anything in this Section F to the contrary, no amendment or termination of this Policy shall be effective if such amendment or termination would (after taking into account any actions taken by the Company contemporaneously with such amendment or termination) cause the Company to violate any federal securities laws, SEC rule or Nasdaq rule.

G. OTHER RECOVERY RIGHTS

This Policy shall be binding and enforceable against all Executive Officers and, to the extent required by applicable law or guidance from the SEC or Nasdaq, their beneficiaries, heirs, executors, administrators or other legal representatives. The Committee intends that this Policy will be applied to the fullest extent required by applicable law. Any employment agreement, equity award agreement, compensatory plan or any other agreement or arrangement with an Executive Officer shall be deemed to include, as a condition to the grant of any benefit thereunder, an agreement by the Executive Officer to abide by the terms of this Policy. Any right of recovery under this Policy is in addition to, and not in lieu of, any other remedies or rights of recovery that may be available to the Company under applicable law, regulation or rule or pursuant to the terms of any policy of the Company or any provision in any employment agreement, equity award agreement, compensatory plan, agreement or other arrangement.

H. DEFINITIONS

For purposes of this Policy, the following capitalized terms shall have the meanings set forth below.

(1) "***Accounting Restatement***" means an accounting restatement due to the material noncompliance of the Company with any financial reporting requirement under the securities laws, including any required accounting restatement to correct an error in previously issued financial statements that is material to the previously issued financial statements (a "Big R" restatement), or that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period (a "little r" restatement).

(2) "***Clawback Eligible Incentive Compensation***" means all Incentive-based Compensation Received by an Executive Officer (i) on or after the effective date of the applicable Nasdaq rules, (ii) after beginning service as an Executive Officer, (iii) who served as an Executive Officer at any time during the applicable performance period relating to any Incentive-based Compensation (whether or not such Executive Officer is serving at the time the Erroneously Awarded Compensation is required to be repaid to the Company), (iv) while the Company has a class of securities listed on a national securities exchange or a national securities association, and (v) during the applicable Clawback Period (as defined below).

(3) "***Clawback Period***" means, with respect to any Accounting Restatement, the three completed fiscal years of the Company immediately preceding the Restatement Date (as defined below), and if the Company changes its fiscal year, any transition period of less than nine months within or immediately following those three completed fiscal years.

(4) "***Erroneously Awarded Compensation***" means, with respect to each Executive Officer in connection with an Accounting Restatement, the amount of Clawback Eligible Incentive Compensation that exceeds the amount of Incentive-based Compensation that otherwise would have been received had it been determined based on the restated amounts, computed without regard to any taxes paid.

(5) "***Executive Officer***" means each individual who is currently or was previously designated as an "officer" of the Company as defined in Rule 16a-1(f) under the Exchange Act. For the avoidance of doubt, the identification of an executive officer for purposes of this Policy shall include each executive officer who is or was identified pursuant to Item 401(b) of Regulation S-K, as well as the principal financial officer and principal accounting officer (or, if there is no principal accounting officer, the controller).

(6) "***Financial Reporting Measures***" means measures that are determined and presented in accordance with the accounting principles used in preparing the Company's financial statements, and all other measures that are derived wholly or in part from such measures. Stock price and total shareholder return (and any measures that are derived wholly or in part from stock

price or total shareholder return) shall, for purposes of this Policy, be considered Financial Reporting Measures. For the avoidance of doubt, a Financial Reporting Measure need not be presented in the Company's financial statements or included in a filing with the SEC.

(7) "***Incentive-based Compensation***" means any compensation that is granted, earned or vested based wholly or in part upon the attainment of a Financial Reporting Measure.

(8) "***Nasdaq***" means The Nasdaq Stock Market.

(9) "***Received***" means, with respect to any Incentive-based Compensation, actual or deemed receipt, and Incentive-based Compensation shall be deemed received in the Company's fiscal period during which the Financial Reporting Measure specified in the Incentive-based Compensation award is attained, even if the payment or grant of the Incentive-based Compensation to the Executive Officer occurs after the end of that period.

(10) "***Restatement Date***" means the earlier to occur of (i) the date the Board, a committee of the Board or the officers of the Company authorized to take such action if Board action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare an Accounting Restatement, or (ii) the date a court, regulator or other legally authorized body directs the Company to prepare an Accounting Restatement.

Effective as of December 1, 2023.