

**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, 2022

OR

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

FOR THE TRANSITION PERIOD FROM TO .

Commission file number: 001-39144

DISH Network Corporation

(Exact name of registrant as specified in its charter)

Nevada
(State or other jurisdiction of incorporation or organization)

88-0336997
(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, \$0.01 par value	DISH	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, 2022, the aggregate market value of Class A common stock held by non-affiliates of the registrant was \$4.7 billion 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 14, 2023, the registrant's outstanding common stock consisted of 292,716,859 shares of Class A common stock and 238,435,208 shares of Class B common stock, each \$0.01 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 “DISH Network,” the “Company,” “we,” “our” and “us” refer to DISH Network Corporation and its subsidiaries, “EchoStar” refers to EchoStar Corporation 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

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.
- 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.
- 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 in providing 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.
- Changes in how network operators handle and charge for access to data that travels across their networks could adversely impact our Pay-TV business.
- Economic weakness and uncertainty may adversely affect our ability to grow or maintain our business.

COVID-19 Pandemic

- The COVID-19 pandemic and its impact on the economic environment generally, and on us specifically, have adversely impacted our business. Furthermore, any continuation or worsening of the pandemic and the economic environment could have a material adverse effect on our business, financial condition and results of operations.

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 subscriber activations decrease, or if our subscriber churn rate, subscriber acquisition costs or retention costs increase, our financial performance will be adversely affected.
- With respect to our Pay-TV business, programming expenses are increasing, which may adversely affect our future 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 may not be able to obtain necessary retransmission consent agreements at acceptable rates, or at all, from local network stations.
- 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.
- 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.
- 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.
- 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.
- We have limited satellite capacity and failures or reduced capacity could adversely affect our business, financial condition and results of operations.
- We may have potential conflicts of interest with EchoStar due to our common ownership and management.
- 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.

Acquisition and Capital Structure Risks

- We have made substantial investments to acquire certain wireless spectrum licenses and other related assets, and we may be unable to realize a return on these assets.
- We have made substantial noncontrolling investments in the Northstar Entities and the SNR Entities related to AWS-3 wireless spectrum licenses, and we may be unable to obtain a profitable return on these investments.
- We may pursue acquisitions and other strategic transactions to complement or expand our business that may not be successful, and we may lose up to the entire value of our investment in these acquisitions and transactions.
- We have substantial debt outstanding and may incur additional debt.
- We may need additional capital, which may not be available on favorable terms, to continue investing in our business and to finance acquisitions and other strategic transactions.

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- The conditional conversion features 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”), if triggered, may adversely affect our financial condition.
- 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.
- We are subject to counterparty risk with respect to the convertible note hedge transactions.
- 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.
- We are controlled by one principal stockholder, who is also our Chairman.

Legal and Regulatory Risks

- 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.
- Our services depend on Federal Communications Commission (“FCC”) licenses that can expire or be revoked or modified and applications for FCC licenses that may not be granted.
- If our internal controls are not effective, our business, our stock price and investor confidence in our financial results may be adversely affected.
- We may face other risks described from time to time in periodic and current reports we file with the Securities and Exchange Commission (“SEC”).

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

DISH Network Corporation was organized in 1995 as a corporation under the laws of the State of Nevada. We started offering the DISH[®] branded pay-TV service in March 1996, the SLING[®] branded pay-TV service in January 2015 and retail wireless services in July 2020. Our common stock is publicly traded on the Nasdaq Global Select Market under the symbol “DISH.” Our principal executive offices are located at 9601 South Meridian Boulevard, Englewood, Colorado 80112 and our telephone number is (303) 723-1000.

DISH Network Corporation is a holding company. Its subsidiaries operate two primary business segments, Pay-TV and Wireless. Our Wireless business segment operates in two business units, Retail Wireless and 5G Network Deployment.

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 and Latino video programming services (“SLING TV”). As of December 31, 2022, we had 9.750 million Pay-TV subscribers in the United States, including 7.416 million DISH TV subscribers and 2.334 million SLING TV subscribers.

Wireless – Retail Wireless

We offer nationwide prepaid and postpaid retail wireless services to subscribers primarily under our Boost Mobile, Boost Infinite 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.

We are currently operating our Retail Wireless business unit as a mobile virtual network operator (“MVNO”) as we continue to complete our 5G Network Deployment. 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, 2022, we had 7.983 million Wireless subscribers.

Wireless – 5G Network Deployment

We have invested a total of over \$30 billion in Wireless spectrum licenses, which includes over \$10 billion in noncontrolling investments in certain entities. The \$30 billion of investments related to Wireless spectrum licenses does not include \$7 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”).

PAY-TV

Business Strategy – Pay-TV

Our Pay-TV 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), SLING International, and SLING Latino, 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 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. For example, for certain new and qualifying customers, we guarantee our pricing for certain programming packages and equipment for a three-year period with a two-year commitment. 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 SLING domestic, SLING International, and SLING Latino 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 our programming content, 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+, HBO Max, STARZ, Peacock, Fubo, Philo and Tubi.

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 Infinite 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.

Boost Infinite. In the fourth quarter of 2022, we launched Boost Infinite, a postpaid wireless service, to a limited number of customers who had signed up for early registration. During the first half of 2023, we anticipate launching our nationwide expansion of Boost Infinite.

We are currently operating our Retail Wireless business unit primarily as a MVNO as we continue to complete our 5G Network Deployment. 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 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 complete 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 Infinite brand operates within the postpaid wireless industry segment. Retail wireless is a mature market with moderate year over year organic growth. Competitors include 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 Communications, Inc. (“Verizon”), AT&T, Inc. (“AT&T”) and T-Mobile US, Inc. (“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 Mobile Network Operators (“MNOs”) in the United States.

Primary competitors to our Retail Wireless business unit 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 and Xfinity Mobile.

5G NETWORK DEPLOYMENT

We have invested a total of over \$30 billion in Wireless spectrum licenses, which includes over \$10 billion in noncontrolling investments in certain entities. The \$30 billion of investments related to Wireless spectrum licenses does not include \$7 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.

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 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. We are currently focused on our progression towards offering 5G broadband service to at least 70% of the U.S. population with a minimum of 15,000 5G sites. As of December 31, 2022, we had started construction on over 15,000 5G sites, which, if completed, are capable of providing broadband coverage to over 60% of the U.S. population. Construction starts are continuing at a rate of approximately 1,000 5G sites per month.

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. In addition, as we complete our initial 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. 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. 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.

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

The AWS-3 Licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. The Northstar Entities and/or the SNR Entities may need to raise significant additional capital in the future, which may be obtained from third party sources or from us, so that the Northstar Entities and the SNR Entities may commercialize, build-out and integrate these AWS-3 Licenses, comply with regulations applicable to such AWS-3 Licenses, and make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. Depending upon the nature and scope of such commercialization, build-out and integration efforts, regulatory compliance, and potential Northstar Re-Auction Payment and SNR Re-Auction Payment, any loans, equity contributions or partnerships could vary significantly.

There can be no assurance that we will be able to obtain a profitable return on our noncontrolling investments in the Northstar Entities and the SNR Entities. See Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

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 Pay-TV operations, our Wireless services business 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. Depending on the circumstances, noncompliance with legislation or regulations promulgated by these authorities could result in limitations on, or the suspension or revocation of, our licenses or registrations, 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.

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 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 Wireless 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 Governing our Pay-TV Operations

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; 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.

We also have month-to-month FSS capacity available from EchoStar on an FSS satellite located at the 121 degree orbital location. As of December 31, 2022, we no longer lease this satellite.

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.

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. We cannot predict whether the FCC will change any of its media ownership rules or the effect that any changes to the media ownership rules could have on our future retransmission consent negotiations. 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. On the same day, the FCC also asked for public comment to refresh the record in its 2018 quadrennial proceeding reviewing its media ownership rules in light of the Supreme Court's ruling. We cannot predict how 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. We cannot be certain whether the FCC will reinstate any Open Internet protections in the future, or whether it will make further attempts to preempt state or local authority to adopt Open Internet laws or regulations.

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.

Charter/Time Warner Cable. In May 2016, the FCC and the Department of Justice approved a merger transaction between Charter, Time Warner Cable, and Advance/Newhouse Partnership. The FCC conditioned its approval on, among other things, Charter not imposing data caps or usage-based pricing for its residential broadband service and a requirement that Charter provide settlement-free interconnection. These conditions last for seven years, with Charter having the option after four years to petition to shorten the term to five years. It is uncertain how these conditions may be interpreted or enforced by the FCC; therefore, we cannot predict the practical effect of these conditions. In addition, as these conditions are currently set to expire in May 2023, we will not be able to rely on these protections beyond that date. 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.

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 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.

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.

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.

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 Regulation

The delivery of satellites and related technical information for purposes of launch by foreign launch service providers is subject to export control and prior approval requirements. 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, the delivery of satellites and the supply of certain related ground control equipment, technical services and data, and satellite communication/control services to destinations outside the United States are subject to export control and prior approval requirements from the United States government (including prohibitions on the sharing of certain satellite-related goods and services with China). There are also instances where export control regulations could apply to our Wireless operations.

Regulations Governing our Wireless Operations

The FCC regulates many aspects of our Wireless 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.

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.

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, among others, laws regulating air emissions, water discharge and waste management. We attempt to maintain compliance with all such requirements. We do not expect capital or other expenditures for environmental compliance to be material in 2023 or 2024. 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.

SEGMENT REPORTING DATA AND GEOGRAPHIC AREA DATA

For segment reporting data and principal geographic area data for 2022, 2021 and 2020, 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 do not have employment agreements with any of 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 14,200 employees at December 31, 2022, most of whom were located in the United States. 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. The current number of union employees at the site is 8.

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.dish.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.dish.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 DISH Network 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	69	Chairman and Director
W. Erik Carlson	53	President, Chief Executive Officer and Director
Thomas A. Cullen	63	Executive Vice President, Corporate Development
Narayan R. Iyengar	48	Executive Vice President and Chief Operating Officer
Timothy A. Messner	48	Executive Vice President, General Counsel and Secretary
Paul W. Orban	54	Executive Vice President and Chief Financial Officer
David A. Scott	49	Executive Vice President and Chief Human Resources Officer
John W. Swieringa	45	President and Chief Operating Officer - Wireless

Charles W. Ergen. Mr. Ergen is executive Chairman and has been Chairman of the Board of Directors of DISH Network since its formation and, during the past five years, has held executive officer and director positions with DISH Network. Mr. Ergen also serves as executive Chairman and Chairman of the Board of Directors of EchoStar. Mr. Ergen co-founded DISH Network with his future spouse, Cantey Ergen, and James DeFranco, in 1980.

W. Erik Carlson. Mr. Carlson has served as President and Chief Executive Officer since December 2017. Mr. Carlson has served as a member of the Board of Directors of DISH Network beginning December 31, 2021. Mr. Carlson is a DISH Network veteran of more than two decades, and has held numerous roles throughout the company. Most recently, Mr. Carlson served as President and Chief Operating Officer. In this role, Mr. Carlson oversaw the company's day-to-day operations including Human Resources, Operations and Information Technology, Media Sales, Marketing, Programming, Product Management, Acquisition and Retention, and Finance and Accounting organizations. Prior to that, Mr. Carlson managed DISH Network's In-Home Services, Customer Service Centers, Customer Billing, and Information Technology organizations, as well as Manufacturing, which consists of equipment retrieval and refurbishment operations. Mr. Carlson also served as Senior Vice President of Retail Services and Sales where he managed the company's indirect sales operations.

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Thomas A. Cullen. Mr. Cullen has served as Executive Vice President, Corporate Development for DISH Network since July 2011. Mr. Cullen previously served as our Executive Vice President, Sales, Marketing and Programming from April 2009 to July 2011 and as our Executive Vice President, Corporate Development from December 2006 to April 2009. Before joining DISH Network, Mr. Cullen held various executive positions in the telecommunications, cable and wireless industries.

Narayan R. Iyengar. Mr. Iyengar has served as Executive Vice President and Chief Operating Officer since March 2022 and is responsible for all operational aspects of DISH Network's consumer businesses, including, Customer Experience Operations, In-Home Services, Billing and Credit, Manufacturing and Distribution, and overall Digital Transformation. Since November 2021, Mr. Iyengar has served on the board of directors, audit committee and executive compensation committee of Build-A-Bear Workshop, Inc. Prior to DISH Network, Mr. Iyengar served as Senior Vice President, Digital and E-Commerce at Albertsons Companies Inc. from 2017 to 2020. Prior to that, from 2013 to 2017, he served as Vice President, E-Commerce and Digital Analytics of The Walt Disney Company.

Timothy A. Messner. Mr. Messner has served as Executive Vice President, General Counsel since November 2017 and is responsible for all legal affairs for DISH Network. Since joining DISH Network in August 2004, Mr. Messner has held various positions of increasing responsibility in DISH Network's legal department. Most recently, Mr. Messner served as Senior Vice President and Deputy General Counsel for DISH Network.

Paul W. Orban. Mr. Orban has served as Executive Vice President and Chief Financial Officer since July 2019 and is responsible 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.

David A. Scott. Mr. Scott has served as Executive Vice President and Chief Human Resources Officer of DISH Network since February 2018 and is responsible for the recruiting, benefits administration, compensation, and leadership and organizational development for DISH Network. Prior to DISH Network, Mr. Scott held various positions at Walmart Inc. from 1997 to 2018, including, among others, Senior Vice President, Talent and Organizational Effectiveness from 2016 to 2018, Senior Vice President, Human Resources from 2014 to 2016, and Vice President, Human Resources from 2011 to 2014.

John W. Swieringa. Mr. Swieringa has served as President and Chief Operating Officer of DISH Network's Wireless business segment since January 2022 and is responsible 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 business unit. 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 DISH Network, 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. We may face other risks described from time to time in periodic and current reports we file with the SEC. If any of the following events occur, our business, financial condition or results of operations could be materially and adversely affected.

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, refusing to enter into data roaming agreements with us; 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 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. 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, 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 communications 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, videogame 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 the Boost Mobile, Ting Mobile and Republic Wireless acquisitions, among others, 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 competitive.*** 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 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 fourth generation of wireless communications and are entering 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 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 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 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, 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. 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 in providing 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 ten-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 offer Retail Wireless services and 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. 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, would 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.

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 ("zero rating"), 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 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.

COVID-19 Pandemic

The COVID-19 pandemic and its impact on the economic environment generally, and on us specifically, have adversely impacted our business. Furthermore, any continuation or worsening of the pandemic and the economic environment could have a material adverse effect on our business, financial condition and results of operations.

The COVID-19 pandemic caused, and any resurgence of the pandemic could again cause a significant reduction in global economic activity, which could affect our customers' purchasing decisions.

Other effects of the pandemic included, and may continue to include, significant volatility and disruption of the global financial markets; adverse revenue and net income effects; disruptions to our operations, including suspension or deferral of in-home installations; limitations on access to sources of liquidity; supply chain disruptions; limitations on access to raw materials; employee impacts from illness; and local and regional closures or lockdowns, including temporary closures of our facilities and the facilities of our customers and suppliers.

The extent to which our operating and financial results will continue to be affected by the pandemic will depend on various factors beyond our control, such as the continued severity of the pandemic, including any sustained geographic resurgence; the emergence of new variants and strains of the COVID-19 virus; and the success of actions to contain or treat the virus. COVID-19, and volatile regional and global economic conditions stemming from the pandemic, could also aggravate our other risk factors described in this section.

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 or Wireless services 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 Retail Wireless 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 either or both of our Pay-TV or Wireless services. 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, including an emphasis on acquiring and retaining higher quality subscribers. In addition, our subscriber acquisition costs could increase as a result of increased spending for advertising and, with respect to our DISH TV services, the installation of more DVR receivers, which are generally more expensive than other receivers. Retention costs with respect to our DISH TV services may be driven higher by increased upgrades of existing subscribers' equipment to DVR receivers.

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 the 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.

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 and partnerships between companies that offer pay-TV services and programmers, 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.

When offering new programming, or upon expiration of existing contracts, programming suppliers have historically attempted to increase the rates that they charge us for programming. We expect this practice to continue, which, if successful, would increase our programming costs. In addition, our programming expenses may also increase as we add programming to our video services or distribute existing programming to our subscribers through additional delivery services. As a result, our margins may face further pressure if we are unable to renew our long-term programming contracts on acceptable pricing and other economic terms. Alternatively, to attempt to mitigate the effect of price increases or for other reasons, we may elect not to carry or may be unable to carry certain channels, which could adversely affect our net Pay-TV subscriber additions.

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 our service or cause potential new Pay-TV subscribers to choose not to subscribe to our 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 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.

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.

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 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 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.

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 businesses, which would suffer in the event of system failures or cyber-attacks. Likewise, our ability to expand and update our information technology infrastructure in response to 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 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 services and Wireless services. Some of our key systems and operations, including, but not limited to, those supplied by 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 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 and Wireless 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 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.

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, 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 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.

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 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, could adversely affect our operations and infrastructure and, as a result, our financial results. Operational impacts resulting from extreme weather, such as 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. We are not able 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 and wireless 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 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 our Pay-TV services or Wireless services. 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 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. Because our independent third-party retailers receive most of their incentive value at activation and not over an extended period of time, our interests may not always be aligned with our independent third-party retailers. It may be difficult to better align our interests with our independent third-party retailers because of their capital and liquidity constraints. 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.

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

Operation of our DISH TV services requires that we have adequate satellite transmission capacity for the programming 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.

Our ability to earn revenue from our DISH TV services depends on 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 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.

Satellites are subject to significant operational risks while in orbit. These risks include malfunctions, commonly referred to as anomalies, which have occurred in our satellites and the satellites of other operators as a result of various factors, such as manufacturing defects, problems with the power systems or control systems of the satellites and general failures resulting from operating satellites in the harsh environment of space.

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, any of which could have a material adverse effect on our business, financial condition and results of operations. Such a failure could result in a prolonged loss of critical programming. A relocation would require FCC approval and we cannot be certain that we could obtain such FCC approval on an acceptable timeline or at all. If we choose to use a satellite in this manner, such use could adversely affect our ability to satisfy certain operational conditions associated with our authorizations and could result in the loss of such authorizations, which would have an adverse effect on our ability to generate revenues.

From time to time, new satellites need to be built and launched. Satellite construction and launch are subject to significant risks, including, among others, construction and launch delays, launch failure and incorrect orbital placement.

Other than in certain limited circumstances, we do not carry commercial in-orbit insurance on any of the satellites we own, and generally do not use commercial insurance to mitigate the potential financial impact of in-orbit failures because we believe that the cost of insurance premiums is uneconomical relative to the risk of such failures. If one or more of our owned in-orbit satellites fails, we could be required to record significant impairment charges.

We may have potential conflicts of interest with EchoStar due to our common ownership and management.

Questions relating to conflicts of interest may arise between EchoStar and us in a number of areas relating to our past and ongoing relationships. Areas in which conflicts of interest between EchoStar and us could arise include, but are not limited to, the following:

- *Cross officerships, directorships and stock ownership.* We have certain overlap in directors and executive officers with EchoStar. These individuals may have actual or apparent conflicts of interest with respect to matters involving or affecting each company. Currently, our Board of Directors and executive officers includes Charles W. Ergen, who serves as the Chairman of EchoStar and as our Chairman. Mr. Ergen also has fiduciary duties to EchoStar's shareholders. For example, there is the potential for a conflict of interest when we or EchoStar look at acquisitions and other business opportunities that may be suitable for both companies. In addition, certain of our directors and officers own EchoStar stock. Mr. Ergen beneficially owns approximately 60.3% of EchoStar's total equity securities (assuming conversion of all Class B common stock into Class A common stock) and controls approximately 93.5% of the voting power of EchoStar. These ownership interests could create actual, apparent or potential conflicts of interest when these individuals are faced with decisions that could have different implications for us and EchoStar. Furthermore, Mr. Ergen is employed by both us and EchoStar.
- *Intercompany agreements with EchoStar.* In connection with and following the Spin-off, Share Exchange Agreement and Master Transaction Agreement (as defined in Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K), we and EchoStar have entered into certain agreements pursuant to which we obtain certain products, services and rights from EchoStar, EchoStar obtains certain products, services and rights from us, and we and EchoStar have indemnified each other against certain liabilities arising from our respective businesses. See Note 19 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information on our Related Party Transactions with EchoStar. The terms of certain of these agreements were established while EchoStar was a wholly-owned subsidiary of us and were not the result of arm's length negotiations. The allocation of assets, liabilities, rights, indemnifications and other obligations between EchoStar and us under the separation and other intercompany agreements we entered into with EchoStar, in connection with the Spin-off, may have been different if agreed to by two unaffiliated parties. Had these agreements been negotiated with unaffiliated third parties, their terms may have been more favorable, or less favorable, to us. In addition, conflicts could arise between us and EchoStar in the interpretation or any extension or renegotiation of these existing agreements.
- *Additional intercompany transactions.* EchoStar and its subsidiaries have entered into, and may continue to enter into, transactions with us and our subsidiaries. Although the terms of any such transactions will be established based upon negotiations between EchoStar and us and, when appropriate, subject to the approval of a committee of the non-interlocking directors or in certain instances non-interlocking management, there can be no assurance that the terms of any such transactions will be as favorable to us or our subsidiaries or affiliates as may otherwise be obtained between unaffiliated parties.
- *Business opportunities.* We have historically retained, and in the future may acquire, interests in various companies that have subsidiaries or controlled affiliates that own or operate domestic or foreign services that may compete with services offered by EchoStar.

We may not be able to resolve any potential conflicts of interest with EchoStar, and, even if we do so, the resolution may be less favorable to us than if we were dealing with an unaffiliated party. We do not have agreements with EchoStar that would prevent either company from competing with the other.

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 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 do not have employment agreements with any of them. Mr. Ergen also serves as the Chairman of EchoStar. To the extent our officers are performing services for EchoStar, this may divert their time and attention away from our business and may therefore adversely affect our business.

In addition, technological innovation is important to our success and depends, to a significant degree, on the work of technically skilled employees. If we are unable to attract and retain appropriately technically skilled employees, our competitive position could be materially and adversely affected. Furthermore, 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.

Acquisition and Capital Structure Risks

We have made substantial investments to acquire certain wireless spectrum licenses and other related assets, and we 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, which includes \$10 billion in noncontrolling investments in certain entities. See Note 2 and Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for detailed information regarding these licenses, including certain interim and final build-out requirements, as well as certain renewal requirements.

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. In addition, as we complete our initial 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. 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.

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 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.

In addition, we may need to raise significant additional capital in the future to fund the efforts described above, which may not be available on favorable terms. There can be no assurance that we will be able to develop and implement a business model that will realize a return on these Wireless spectrum licenses or that we will be able to profitably deploy the assets represented by 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 have made substantial noncontrolling investments in the Northstar Entities and the SNR Entities related to AWS-3 wireless spectrum licenses, and we may be unable to obtain a profitable return on these investments.

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 (collectively, the “Northstar Entities”), and in SNR HoldCo, the parent company of SNR Wireless (collectively, the “SNR Entities”), respectively. Northstar Wireless and SNR Wireless each participated in Auction 97 for the purpose of acquiring certain AWS-3 licenses, and were granted 261 and 244 AWS-3 Licenses (the “AWS-3 Licenses”), respectively, which are subject to certain interim and final build-out requirements. 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 with the United States Supreme Court requesting that it hear a further appeal.

See Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for detailed information regarding these investments, including the operative agreements governing the investments, the FCC’s determination of our *de facto* control, the potential re-auction payments for certain AWS-3 licenses retained by the FCC, and the build-out requirements for the AWS-3 Licenses.

We do not own or control the Northstar Licenses or the SNR Licenses nor do we control the Northstar Entities or the SNR Entities. We do not have a right to require Northstar Manager or SNR Management to sell their respective ownership interests in Northstar Spectrum and SNR Holdco to us. Northstar Manager, as the sole manager of Northstar Spectrum, and SNR Management, as the sole manager of SNR Holdco, will have the exclusive right and power to manage, operate and control Northstar Spectrum and SNR Holdco, respectively, subject to certain limited protective provisions for the benefit of American II and American III, respectively. Northstar Manager and SNR Management have the ability, but not the obligation, to require Northstar Spectrum and SNR Holdco, respectively, to purchase Northstar Manager’s and SNR Management’s ownership interests in those respective entities. 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. The consummation of the sale is subject to approval by the FCC.

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. The consummation of the sale is subject to approval by the FCC. Thus, we cannot be certain that the Northstar Licenses or the SNR Licenses will be developed in a manner fully consistent with our current or future business plans.

In addition, we may need to make significant additional loans to the Northstar Entities and the SNR Entities, or they may need to partner with others, so that the Northstar Entities and the SNR Entities may commercialize, build-out and integrate the AWS-3 Licenses, comply with regulations applicable to the AWS-3 Licenses, and make any potential re-auction payments for the AWS-3 licenses retained by the FCC. Depending upon the nature and scope of such commercialization, build-out and integration efforts, regulatory compliance, and potential re-auction payments, any loans, equity contributions or partnerships could vary significantly. There can be no assurance that we will be able to obtain a profitable return on our noncontrolling investments in the Northstar Entities and the SNR Entities. Any of the following risks, among others, may have a material adverse effect on our business, results of operations and financial condition.

Furthermore, litigation surrounding designated entity structures, increased regulatory scrutiny or third party or government lawsuits with respect to our noncontrolling investments in the Northstar Entities and the SNR Entities could result in fines, and in certain cases, license revocation and/or criminal penalties, which could have a material adverse effect on our business, financial condition or results of operations.

We may pursue acquisitions and other strategic transactions to complement or expand our business that may not be successful, and we may lose up to the entire value 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 diversion of our management's attention from our existing business to integrate the operations and personnel of the acquired or combined business or joint venture;
- the possible adverse effects on our 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;
- 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.

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 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.

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 have substantial debt outstanding and may incur additional debt.

As of December 31, 2022, our total long-term debt and finance lease obligations (including current portion) outstanding, including the debt of our subsidiaries, was \$21.349 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 may incur substantial 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 may need additional capital, which may not be available on favorable terms, to continue investing in our business and to finance acquisitions and other strategic transactions.

We may need to raise significant additional capital in the future, which may not be available on favorable terms to, among other things, continue investing in our business, complete our 5G Network Deployment and to pursue acquisitions and other strategic transactions (including, but not limited to, significant investments in our Wireless business). 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, 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 or weak results of operations 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. 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 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.

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

Charles W. Ergen, our Chairman, beneficially owns approximately 51.8% of our total equity securities (assuming conversion of all Class B common stock into Class A common stock) and controls approximately 90.4% of the total voting power. Through his voting power, 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, DISH Network is a “controlled company” as defined in the Nasdaq listing rules and is, therefore, 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; and (iv) director nominees selected, or recommended for selection by the Board of Directors, either by a majority of the independent directors or a nominating committee composed solely of independent directors. Mr. Ergen is also the principal stockholder and Chairman of EchoStar. It may be difficult for a third party to acquire us, even if doing so may be beneficial to our shareholders, because of our ownership 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;
- 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, Charles W. Ergen, our Chairman, controls approximately 90.4% of the total voting power of our company. Such control by Mr. Ergen may make it impractical for any third party to effect a change in control of our company. In addition, pursuant to our articles of incorporation we have a significant amount of authorized and unissued stock which would allow our Board of Directors to issue shares to persons friendly to current management, thereby protecting the continuity of its management, or which could be used to dilute the stock ownership of persons seeking to obtain control of us.

Legal and Regulatory Risks

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 or licensed by 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 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, 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*” of 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.

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 services available to our DISH TV 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.

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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, 2022. 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, investor confidence in our financial results may weaken, and our stock price may suffer.

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 2. PROPERTIES

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

<u>Description/Use/Location</u>	<u>Segment(s) Using Property</u>	<u>Owned</u>	<u>Leased From</u>	
			<u>EchoStar</u>	<u>Other Third Party</u>
Corporate headquarters, Englewood, Colorado (1)	Pay-TV / Wireless		X	
General offices, Littleton, Colorado	Wireless	X		
Customer call center, warehouse, service, and remanufacturing center, El Paso, Texas	Pay-TV	X		
Data Center, Cheyenne, Wyoming	Pay-TV / Wireless	X		
Digital broadcast operations center, Cheyenne, Wyoming	Pay-TV	X		
Digital broadcast operations center, Gilbert, Arizona	Pay-TV	X		
Engineering offices and service center, Englewood, Colorado	Pay-TV / Wireless	X		
General offices, Overland Park, Kansas	Wireless			X
Warehouse and distribution center, Spartanburg, South Carolina	Wireless			X
Warehouse and distribution center, Denver, Colorado	Pay-TV / Wireless			X
Warehouse and distribution center, Atlanta, Georgia	Pay-TV / Wireless			X
Warehouse, Denver, Colorado	Pay-TV	X		

(1) See Note 19 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information on our Related Party Transactions with EchoStar.

In addition to the principal properties listed above, we operate numerous facilities for, among other things, our in-home service operations, customer call centers and digital broadcast operations centers strategically located in regions throughout the United States. Furthermore, we own or lease capacity on 11 satellites, which are a major component of our DISH TV services. 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 "DISH."

As of February 14, 2023, there were approximately 6,409 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 14, 2023, all of the 238,435,208 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.

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, 2022 through December 31, 2022.

<u>Period</u>	<u>Total Number of Shares Purchased</u>	<u>Average Price Paid per Share</u>	<u>Total Number of Shares Purchased as Part of Publicly Announced Programs</u>	<u>Maximum Approximate Dollar Value of Shares that May Yet be Purchased Under the Programs (1)</u>
			(In thousands, except share data)	
October 1, 2022 - October 31, 2022	—	\$ —	—	\$ 1,000,000
November 1, 2022 - November 30, 2022	—	\$ —	—	\$ 1,000,000
December 1, 2022 - December 31, 2022	—	\$ —	—	\$ 1,000,000
Total	—	\$ —	—	\$ 1,000,000

- (1) Our Board of Directors previously authorized stock repurchases of up to \$1.0 billion of our outstanding Class A common stock through and including December 31, 2022. On October 21, 2022, our Board of Directors extended this authorization such that we are currently authorized to repurchase up to \$1.0 billion 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.

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

We currently operate two primary business segments, Pay-TV and Wireless. Our Wireless business segment consists of two business units, Retail Wireless and 5G Network Deployment.

Our Pay-TV 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 business unit offers prepaid and postpaid retail wireless services to subscribers primarily under our Boost Mobile, Boost Infinite 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. 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 complete 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.

Our 5G Network Deployment business unit strategy is to commercialize our Wireless spectrum licenses through the completion of our 5G Network Deployment. We have committed to deploy a facilities-based 5G broadband 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. We are currently focused on our progression towards offering 5G broadband service to at least 70% of the U.S. population with a minimum of 15,000 5G sites. As of December 31, 2022, we had started construction on over 15,000 5G sites, which, if completed, are capable of providing broadband coverage to over 60% of the U.S. population. Construction starts are continuing at a rate of approximately 1,000 5G sites per month.

Recent Developments

Economic Environment

During 2022, 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 as compared to the same period in 2021.

COVID-19 Update

The COVID-19 pandemic created unanticipated circumstances and uncertainty, disruption, and significant volatility in the economic environment generally, which have adversely affected, and may continue to adversely affect, our business operations, including our supply chain, and could materially and adversely affect our business, financial condition and results of operations. In addition, any resurgence in COVID-19 could adversely affect our business, financial condition and results of operations.

EXPLANATION OF KEY METRICS AND OTHER ITEMS

Service revenue. “Service revenue” consists principally of Pay-TV and Wireless subscriber 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 and the non-subsidized sales of Pay-TV equipment.

Cost of services. “Cost of services” principally includes Pay-TV programming expenses and other operating costs related to our Pay-TV segment and costs of Wireless services (including costs incurred under the MNSA and NSA).

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, 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, 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.

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, 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 DISH Network” 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 DISH Network” 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 business unit “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.

Free cash flow. We define free cash flow as “Net cash flows from operating activities” less “Purchases of property and equipment” and “Capitalized interest related to FCC authorizations,” as shown on our Consolidated Statements of Cash Flows.

RESULTS OF OPERATIONS – Segments

Business Segments

We currently operate two primary business segments: (1) Pay-TV; and (2) Wireless. Our Wireless segment consists of two business units, the Retail Wireless business unit and 5G Network Deployment business unit. Revenue and operating income (loss) by segment are shown in the table below:

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)
Wireless	4,180,018	4,957,272	(777,254)	(15.7)
Eliminations	(6,003)	(4,873)	(1,130)	(23.2)
Total revenue	\$ 16,679,407	\$ 17,881,106	\$ (1,201,699)	(6.7)
Operating income (loss):				
Pay-TV	\$ 2,933,898	\$ 3,075,580	\$ (141,682)	(4.6)
Wireless	(888,232)	127,455	(1,015,687)	*
Total operating income (loss)	\$ 2,045,666	\$ 3,203,035	\$ (1,157,369)	(36.1)

* Percentage is not meaningful.

Total revenue. Our consolidated revenue totaled \$16.679 billion for the year ended December 31, 2022, a decrease of \$1.202 billion or 6.7% compared to the same period in 2021. The net decrease primarily resulted from the decrease in revenue from our Wireless segment and our Pay-TV segment.

Total operating income (loss). Our consolidated operating income totaled \$2.046 billion for the year ended December 31, 2022, a decrease of \$1.157 billion or 36.1% compared to the same period in 2021. The net decrease primarily resulted from the decrease in operating income from our Wireless segment and to a lesser extent our Pay-TV segment.

Pay-TV Segment

We offer Pay-TV services under the DISH[®] brand and the SLING[®] brand. As of December 31, 2022, we had 9.750 million Pay-TV subscribers in the United States, including 7.416 million DISH TV subscribers and 2.334 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, and SLING Latino 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 increasing their Internet-based video offerings. We also face competition from providers of video content, many of which are providers of our programming content, 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+, HBO Max, STARZ, Peacock, Fubo, Philo and Tubi.

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. 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. 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 Inc. (“Tegna”) removed its channels from our DISH TV programming lineup in 53 markets. On February 4, 2022, we and Tegna signed a new long-term 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, but not limited to, 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, the Walt Disney Company (“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.

In addition, 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 additional 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, distribution and sales of the infringing products. The ITC commissioners are now reviewing that Initial Determination. On February 9, 2023, we entered into a confidential license agreement covering Mirror exercise equipment that resolves our litigation involving those products.

RESULTS OF OPERATIONS – Pay-TV Segment
Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021.

Statements of Operations Data	For the Years Ended December 31,		Variance	
	2022	2021	Amount	%
	(In thousands)			
Revenue:				
Service revenue	\$ 12,351,918	\$ 12,748,334	\$ (396,416)	(3.1)
Equipment sales and other revenue	153,474	180,373	(26,899)	(14.9)
Total revenue	<u>12,505,392</u>	<u>12,928,707</u>	<u>(423,315)</u>	<u>(3.3)</u>
Costs and expenses:				
Cost of services	7,423,427	7,735,410	(311,983)	(4.0)
% of Service revenue	60.1 %	60.7 %		
Cost of sales - equipment and other	97,315	104,941	(7,626)	(7.3)
Selling, general and administrative expenses	1,622,280	1,473,940	148,340	10.1
% of Total revenue	13.0 %	11.4 %		
Depreciation and amortization	428,472	538,836	(110,364)	(20.5)
Total costs and expenses	<u>9,571,494</u>	<u>9,853,127</u>	<u>(281,633)</u>	<u>(2.9)</u>
Operating income (loss)	<u>\$ 2,933,898</u>	<u>\$ 3,075,580</u>	<u>\$ (141,682)</u>	<u>(4.6)</u>
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	\$ 131,093	\$ 173,485	\$ (42,392)	(24.4)
OIBDA	\$ 3,362,370	\$ 3,614,416	\$ (252,046)	(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.

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 \$12.352 billion for the year ended December 31, 2022, a decrease of \$396 million or 3.1% 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 60.7% of “Service revenue” during the years ended December 31, 2022 and 2021, 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 \$1.622 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.

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.*”

Wireless Segment

Our Wireless business segment operates in two business units, Retail Wireless and 5G Network Deployment. Revenue and operating income (loss) by business unit are shown in the table below:

For the Year Ended December 31, 2022	Retail Wireless	5G Network Deployment	Eliminations	Total Wireless
	(In thousands)			
Total revenue	\$ 4,135,129	\$ 65,768	\$ (20,879)	\$ 4,180,018
Operating income (loss)	\$ (77,264)	\$ (810,968)	\$ —	\$ (888,232)

For the Year Ended December 31, 2021	Retail Wireless	5G Network Deployment	Eliminations	Total Wireless
	(In thousands)			
Total revenue	\$ 4,897,205	\$ 73,889	\$ (13,822)	\$ 4,957,272
Operating income (loss)	\$ 343,785	\$ (216,330)	\$ —	\$ 127,455

For the years ended December 31, 2022 and 2021, total purchases of property and equipment for our Wireless segment were \$2.596 billion and \$1.012 billion, respectively. This increase primarily resulted from capital expenditures related to our 5G Network Deployment.

Wireless – Retail Wireless

We offer nationwide prepaid and postpaid Retail Wireless services to subscribers primarily under our Boost Mobile, Boost Infinite 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.

Boost Infinite. In the fourth quarter of 2022, we launched Boost Infinite, a postpaid wireless service, to a limited number of customers who had signed up for early registration. During the first half of 2023, we anticipate launching our nationwide expansion of Boost Infinite.

We are currently operating our Retail Wireless business unit primarily as a MVNO as we continue to complete our 5G Network Deployment. 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.

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. Our efforts to mitigate the effects of the CDMA shutdown during 2021 were impacted by, among other things, wireless device shortages. Access to wireless devices improved during the first and second quarters of 2022, which aided our migration efforts but the mix of available wireless devices came at a significant cost. The CDMA shutdown has negatively impacted our gross new Wireless subscriber activations, our Wireless churn rate, and our results of operations. 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 139,000 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 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. The migration of subscribers during 2022 negatively impacted our Wireless churn rate and our results of operations.

As of December 31, 2022, we had 7.983 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.

Recent 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 recent preliminary conversations with CONX Corp. (an entity partially owned by Charles W. Ergen, our Chairman) regarding a transaction involving our Retail Wireless business. There can be no assurance that these preliminary 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 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 business unit 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 and Xfinity Mobile.

Wireless – 5G Network Deployment

We have invested a total of over \$30 billion in Wireless spectrum licenses, which includes over \$10 billion in noncontrolling investments in certain entities. The \$30 billion of investments related to Wireless spectrum licenses does not include \$7 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.

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 our 5G Network Deployment. We have committed to deploy a facilities-based 5G broadband 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. We are currently focused on our progression towards offering 5G broadband service to at least 70% of the U.S. population with a minimum of 15,000 5G sites. As of December 31, 2022, we had started construction on over 15,000 5G sites, which, if completed, are capable of providing broadband coverage to over 60% of the U.S. population. Construction starts are continuing at a rate of approximately 1,000 5G sites per month.

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. In addition, as we complete our initial 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. 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. 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.

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 “FCC authorizations” 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 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 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

The AWS-3 Licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. The Northstar Entities and/or the SNR Entities may need to raise significant additional capital in the future, which may be obtained from third party sources or from us, so that the Northstar Entities and the SNR Entities may commercialize, build-out and integrate these AWS-3 Licenses, comply with regulations applicable to such AWS-3 Licenses, and make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. Depending upon the nature and scope of such commercialization, build-out and integration efforts, regulatory compliance, and potential Northstar Re-Auction Payment and SNR Re-Auction Payment, any loans, equity contributions or partnerships could vary significantly. See Note 15 in the Notes to our Consolidated Financial Statements in this Annual Report on Form 10-K for further information.

We may need to raise significant additional capital in the future to fund the efforts described above, which may not be available on favorable terms. There can be no assurance that we, the Northstar Entities and/or the SNR Entities will be able to develop and implement business models that will realize a return on these Wireless spectrum licenses or that we, the Northstar Entities and/or the SNR Entities will be able to profitably deploy the assets represented by 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.

RESULTS OF OPERATIONS – Wireless Segment – Retail Wireless Business Unit

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

Statements of Operations Data	For the Years Ended December 31,		Variance	
	2022	2021	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 business unit, 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.

RESULTS OF OPERATIONS – Wireless Segment – 5G Network Deployment Business Unit

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

Statements of Operations Data	For the Years Ended December 31,		Variance	
	2022	2021	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:				
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.

OTHER CONSOLIDATED RESULTS

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

Statements of Operations Data	For the Years Ended December 31,		Variance	
	2022	2021	Amount	%
	(In thousands)			
Operating income (loss)	\$ 2,045,666	\$ 3,203,035	\$ (1,157,369)	(36.1)
Other income (expense):				
Interest income	42,776	11,338	31,438	*
Interest expense, net of amounts capitalized	(22,781)	(16,174)	(6,607)	(40.8)
Other, net	1,038,982	20,557	1,018,425	*
Total other income (expense)	1,058,977	15,721	1,043,256	*
Income (loss) before income taxes	3,104,643	3,218,756	(114,113)	(3.5)
Income tax (provision) benefit, net	(731,736)	(762,810)	31,074	4.1
Effective tax rate	23.6 %	23.7 %		
Net income (loss)	2,372,907	2,455,946	(83,039)	(3.4)
Less: Net income (loss) attributable to noncontrolling interests, net of tax	69,674	45,304	24,370	53.8
Net income (loss) attributable to DISH Network	\$ 2,303,233	\$ 2,410,642	\$ (107,409)	(4.5)

* Percentage is not meaningful.

Other, net. “Other, net” income totaled \$1.039 billion during the year ended December 31, 2022, an increase of \$1.018 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 \$732 million during the year ended December 31, 2022, a decrease of \$31 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,	
	2022	2021
	<i>(In thousands)</i>	
Net income (loss) attributable to DISH Network	\$ 2,303,233	\$ 2,410,642
Interest, net	(19,995)	4,836
Income tax provision (benefit), net	731,736	762,810
Depreciation and amortization	717,073	724,852
Consolidated EBITDA	\$ 3,732,047	\$ 3,903,140

The changes in Consolidated EBITDA during the year ended December 31, 2022, compared to the same period in 2021, were primarily a result of the factors described in connection with operating revenues and operating expenses, including the positive impact in 2022 from a \$1.015 billion increase in the fair value of our option to purchase certain of T-Mobile's 800 MHz spectrum licenses.

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 units on a more variable cost basis as it excludes the depreciation and amortization expenses related primarily to capital expenditures and acquisitions for those business units, 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 unit 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, 2022	Pay-TV	Retail Wireless	5G Network Deployment	Wireless Eliminations	Consolidated
	(In thousands)				
Segment operating income (loss)	\$ 2,933,898	\$ (77,264)	\$ (810,968)	\$ —	\$ 2,045,666
Depreciation and amortization	428,472	177,914	131,566	(20,879)	717,073
OIBDA	\$ 3,362,370	\$ 100,650	\$ (679,402)	\$ (20,879)	\$ 2,762,739
For the Year Ended December 31, 2021					
Segment operating income (loss)	\$ 3,075,580	\$ 343,785	\$ (216,330)	\$ —	\$ 3,203,035
Depreciation and amortization	538,836	176,833	23,005	(13,822)	724,852
OIBDA	\$ 3,614,416	\$ 520,618	\$ (193,325)	\$ (13,822)	\$ 3,927,887

The changes in OIBDA during the year ended December 31, 2022, compared to the same period in 2021, were primarily a result of the factors described in connection with operating revenues and operating expenses.

GUARANTOR FINANCIAL INFORMATION

Our DISH Senior Secured Notes are fully and unconditionally guaranteed, jointly and severally, by certain of our restricted subsidiaries on a senior secured basis (the “Secured Guarantors”) and certain other material subsidiaries (the “Unsecured Guarantors”).

The indentures relating to our 11 3/4% Senior Notes due 2027 provide that, a guarantor will be released from its obligations to guarantee the 11 3/4% Senior Notes due 2027 as the case may be: (i) if pursuant to any direct or indirect sale of assets (including, if applicable, all of the capital stock of any guarantor) or other disposition by way of merger, consolidation or otherwise the assets sold include all or substantially all of the assets of any guarantor or all of the capital stock of any such guarantor provided that in the event of an asset sale, the net proceeds from such sale or other disposition are applied in accordance with the provisions of the related indenture; (ii) if such guarantor is dissolved or liquidated; (iii) if in the case of an unsecured guarantor, if such unsecured guarantor no longer constitutes a material subsidiary; or (iv) if we exercise our option to effect legal defeasance or covenant defeasance or if our obligations under the related indenture are discharged.

The following tables include summarized financial information of the obligor group of the DISH Senior Secured Notes. The summarized financial information of the obligor group is presented on a combined basis with balances and transactions within the obligor group eliminated. Investments in and the equity in earnings of non-guarantor subsidiaries, which would otherwise be consolidated in accordance with U.S. GAAP, are excluded from the below summarized financial information pursuant to SEC Regulation S-X Rule 13-01.

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The summarized balance sheet information for the combined obligor group of the DISH Senior Secured Notes is presented in the table below:

	As of
	December 31, 2022
	(In thousands)
Current assets	\$ 428,133
Noncurrent assets	17,208,781
Total assets	<u>\$ 17,636,914</u>
Current liabilities	\$ 2,826,627
Long-term obligations, net of current portion	12,338,368
Total liabilities	<u>\$ 15,164,995</u>

The summarized results of operations information for the combined obligor group of the DISH Senior Secured Notes is presented in the table below:

	For the Year Ended
	December 31, 2022
	(In thousands)
Total revenue	\$ 3,867,162
Total costs and expenses	4,715,962
Net income (loss)	(84,378)

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, 2022, our cash, cash equivalents and current marketable investment securities totaled \$2.621 billion compared to \$5.404 billion as of December 31, 2021, a decrease of \$2.783 billion. This decrease in cash, cash equivalents and current marketable investment securities primarily resulted from a \$1.974 billion payment to the FCC for the 3.45–3.55 GHz band licenses, capital expenditures of \$3.712 billion (including capitalized interest related to FCC authorizations) and the repurchases and redemption of our 5 7/8% Senior Notes due 2022 with an aggregate principal balance of \$2.0 billion and \$57 million of repurchases of our 5% Senior Notes due 2023 in open market trades, partially offset by cash generated from operating activities of \$3.092 billion and \$1.949 billion in net proceeds from the issuance of our 11 3/4% Senior Notes due 2027. During the first quarter of 2022, we paid a total of \$7.205 billion to the FCC for the 3.45–3.55 GHz band licenses, of which \$1.974 billion was paid from cash, cash equivalents and current marketable investment securities and \$5.231 billion was paid from restricted cash, cash equivalents and marketable investment securities.

Restricted Cash, Cash Equivalents and Marketable Investment Securities

As of December 31, 2022, our restricted cash, cash equivalents and marketable investment securities totaled \$105 million compared to \$5.335 billion as of December 31, 2021, a decrease of \$5.230 billion. This decrease in restricted cash, cash equivalents and marketable investment securities primarily resulted from a \$5.231 billion payment to the FCC for the 3.45–3.55 GHz band licenses. During the first quarter of 2022, we paid a total of \$7.205 billion to the FCC for the 3.45–3.55 GHz band licenses, of which \$1.974 billion was paid from cash, cash equivalents and current marketable investment securities and \$5.231 billion was paid from restricted cash, cash equivalents and marketable investment securities.

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.

During the year ended December 31, 2022, we repurchased approximately \$57 million of our 5% Senior Notes due 2023 in open market trades. The remaining balance of approximately \$1.443 billion matures on March 15, 2023. We expect to fund this obligation from cash and marketable investment securities balances.

Cash Flow

The following discussion highlights our cash flow activities during the years ended December 31, 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, 2022 and 2021, we reported “Net cash flows from operating activities” of \$3.092 billion and \$4.031 billion, respectively.

Net cash flows from operating activities from 2021 to 2022 decreased \$939 million, primarily attributable to a \$1.031 billion decrease in income adjusted to exclude non-cash charges for “Depreciation and amortization” expense, “Realized and unrealized losses (gains) on investments, derivatives and other,” “Non-cash, stock-based compensation” expense, 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, 2022 and 2021, we reported outflows from “Net cash flows from investing activities” of \$8.787 billion and \$4.410 billion, respectively.

The year ended December 31, 2022 was impacted by cash outflows primarily related to a \$7.205 billion payment to the FCC for the 3.45–3.55 GHz band licenses and capital expenditures of \$3.712 billion (including capitalized interest related to FCC authorizations), partially offset by \$2.125 billion in net sales of marketable investment securities.

The year ended December 31, 2021 was impacted by cash outflows primarily related to \$2.618 billion in net purchases of marketable investment securities and capital expenditures of \$1.964 billion (including capitalized interest primarily related to FCC authorizations), 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, 2022 and 2021, capital expenditures for wireless equipment totaled \$2.596 billion and \$1.012 billion, respectively. The increase in 2022 for wireless equipment primarily resulted from the build-out of our 5G Network Deployment. In addition, capital expenditures during the years ended December 31, 2022 and 2021 for new and existing DISH TV customer equipment totaled \$78 million and \$104 million, respectively. 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 years ended December 31, 2022 and 2021, other corporate capital expenditures totaled \$53 million and \$70 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, 2022 and 2021, we reported “Net cash flows from financing activities” outflows of \$191 million and inflows of \$4.659 billion, respectively.

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 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.

Free Cash Flow

We define free cash flow as “Net cash flows from operating activities” less “Purchases of property and equipment,” and “Capitalized interest related to FCC 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,” and “Capitalized interest related to FCC 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,		
	2022	2021	2020
	(In thousands)		
Net cash flows from operating activities	\$ 3,092,100	\$ 4,031,251	\$ 3,311,776
Purchases of property and equipment (including capitalized interest related to FCC authorizations)	(3,711,611)	(1,963,527)	(1,192,506)
Free cash flow	<u>\$ (619,511)</u>	<u>\$ 2,067,724</u>	<u>\$ 2,119,270</u>

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 segment and Retail Wireless business unit. We are also making significant additional investments and will need to continue making these investments and/or partner with others to, among other things, complete 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 total expenditures for our 5G Network Deployment to increase during 2023 and in future periods as we commercialize our 5G Network. As a result, our historical cash flow is not necessarily indicative of our future cash flows. As of December 31, 2022, 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 2023 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 Segment and Retail Wireless Business Unit

See “Results of Operations” above for further information.

Subscriber Acquisition and Retention Costs

We incur significant upfront costs to acquire Pay-TV and Wireless 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, we employ business rules such as minimum credit requirements for prospective customers and contractual commitments to receive service for a minimum term. We strive to provide outstanding customer service to increase the likelihood of customers keeping their Pay-TV services 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.

Satellites

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.

Stock Repurchases

Our Board of Directors previously authorized stock repurchases of up to \$1.0 billion of our outstanding Class A common stock. On October 21, 2022, our Board of Directors extended this authorization such that we are currently authorized to repurchase up to \$1.0 billion of our outstanding Class A common stock through and including December 31, 2023. As of December 31, 2022, we may repurchase up to \$1.0 billion under this program. During the years ended December 31, 2022, 2021 and 2020, there were no repurchases of our Class A common stock.

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. In particular, 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 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 and DISH DBS 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 will need to make significant additional investments to, among other things, complete 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, including, but not limited to, capitalized costs associated with our new and existing subscriber equipment lease programs.

Certain of our capital expenditures for 2023 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. 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. On October 21, 2022 the Northstar Put Right was exercised. As of December 31, 2022, the aggregate value of Northstar Manager's ownership interest in Northstar Spectrum and SNR Management's ownership interest in SNR HoldCo was \$464 million, recorded as "Redeemable noncontrolling interests" on our Consolidated Balance Sheets.

We have and expect to continue to incur significant expenditures in 2023 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, 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, could require that we raise additional capital in the future.

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.

Wireless – 5G Network Deployment

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

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 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 and the Northstar Licenses and SNR Licenses into a single unit of accounting. In 2020, we combined our 600 MHz, 700 MHz, AWS-4, H Block, and the Northstar Licenses and SNR Licenses into a single unit of accounting, excluding the High-Band Licenses.

In 2022, we quantitatively assessed these licenses for impairment. Our quantitative assessment consisted of both an income approach performed by DISH Network and 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.

Income Approach. The income approach estimated the fair value of these licenses using the “Greenfield” approach. The Greenfield approach is an income based valuation approach that values the Wireless spectrum licenses by calculating the cash flow generating potential of a hypothetical start-up company that goes into business with no assets except the Wireless spectrum licenses to be valued. A discounted cash flow analysis is used to estimate what a marketplace participant would be willing to pay to purchase the aggregated Wireless spectrum licenses as of the valuation date. As a result, we were required to make significant estimates about future cash flows and profitability specifically associated with our Wireless spectrum licenses, an appropriate discount rate based on the risk associated with those estimated cash flows and assumed terminal value and growth rates. We considered current and expected future economic conditions, current and expected availability of wireless network technology and infrastructure and related equipment and the costs thereof as well as other relevant factors in estimating future cash flows and profitability.

The discount rate represented our estimate of the weighted-average cost of capital (WACC), or expected return, that a marketplace participant would have required as of the valuation date. We developed the discount rate based on our consideration of the cost of debt and equity of a group of guideline companies as of the valuation date. Accordingly, our discount rate incorporated our estimate of the expected return a marketplace participant would have required as of the valuation date, including the risk premium associated with the current and expected economic conditions as of the valuation date.

As part of our impairment 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 and 2020, 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 2020, our 37 GHz, 39 GHz, and 47 GHz wireless spectrum licenses were assessed as a single unit of accounting. These licenses were purchased during 2020 through our participation in Auction 103. For 2020, management’s assessment of the fair value of these licenses was determined based on the auction results.

During 2022, 2021, and 2020, our multichannel video distribution and data service (“MVDDS”) wireless spectrum licenses were assessed as a single unit of accounting. For 2022, 2021 and 2020, 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.

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.

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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

We do not have any material backlog of our products.

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, 2022, our cash, cash equivalents and current marketable investment securities had a fair value of \$2.621 billion. Of that amount, a total of \$2.620 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, 2022 current non-strategic investment portfolio of \$2.620 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, 2022 of 1.2%. 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 2022 would result in a decrease of approximately \$4 million in annual interest income.

Restricted Cash, Cash Equivalents and Marketable Investment Securities

As of December 31, 2022, we had \$105 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, 2022 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.

Long-Term Debt

As of December 31, 2022, we had long-term debt of \$21.331 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 \$17.267 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 \$660 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, 2022, 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, 2022, 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 Chief 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 Chief 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

There has been no change in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Securities Exchange Act of 1934) during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. However, we are continually monitoring the COVID-19 pandemic and any potential impact to our internal controls.

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, 2022.

The effectiveness of our internal control over financial reporting as of December 31, 2022 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

None.

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*

	<u>Page</u>
Report of KPMG LLP, Independent Registered Public Accounting Firm	F-2
Consolidated Balance Sheets	F-4
Consolidated Statements of Operations and Comprehensive Income (Loss)	F-5
Consolidated Statements of Changes in Stockholders' Equity (Deficit)	F-6
Consolidated Statements of Cash Flows	F-7
Notes to Consolidated Financial Statements	F-8

(2) *Financial Statement Schedules*

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

(3) *Exhibits*

- 2.1* [Master Transaction Agreement, dated as of May 19, 2019, by and among DISH Network Corporation, BSS Merger Sub Inc., EchoStar Corporation, and EchoStar BSS Corporation \(incorporated by reference from Exhibit 2.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed July 29, 2019\).](#)
- 2.2* [Asset Purchase Agreement, dated as of July 26, 2019, by and among T-Mobile US, Inc., Sprint Corporation and DISH Network Corporation \(incorporated by reference from Exhibit 2.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed July 29, 2019\).](#)
- 2.3* [First Amendment to the Asset Purchase Agreement, dated June 17, 2020, by and between DISH Network and NTM \(incorporated by reference from Exhibit 99.1 of the Current Report on Form 8-K of DISH Network Corporation filed June 17, 2020\).](#)
- 3.1(a)* [Amended and Restated Articles of Incorporation of DISH Network Corporation \(incorporated by reference to Exhibit 3.1\(a\) on the Quarterly Report on Form 10-Q of DISH Network Corporation for the quarter ended June 30, 2003\), as amended by the Certificate of Amendment to the Articles of Incorporation of DISH Network Corporation \(incorporated by reference to Annex 1 on DISH Network Corporation's Definitive Information Statement on Schedule 14C filed on December 31, 2007\) and as further amended by the Certificate of Amendment to the Articles of Incorporation of DISH Network Corporation, effective November 3, 2015 \(incorporated by reference from Exhibit 3.1 to the Current Report on Form 8-K of DISH Network Corporation filed November 3, 2015\).](#)
- 3.1(b) [Composite Amended and Restated Articles of Incorporation of DISH Network Corporation.](#)
- 3.1(c)* [Amended and Restated Bylaws of DISH Network Corporation \(incorporated by reference from Exhibit 99.1 to the Current Report on Form 8-K of DISH Network Corporation filed November 7, 2019\).](#)

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- 3.2(a)* [Articles of Incorporation of DISH DBS Corporation \(incorporated by reference from Exhibit 3.4\(a\) to the Registration Statement on Form S-4 of DISH DBS Corporation\), as amended by the Certificate of Amendment of the Articles of Incorporation of DISH DBS Corporation, dated as of August 25, 2003 \(incorporated by reference from Exhibit 3.1\(b\) to the Annual Report on Form 10-K of DISH DBS Corporation for the year ended December 31, 2003\), and as further amended by the Amendment of the Articles of Incorporation of DISH DBS Corporation, effective December 12, 2008 \(incorporated by reference from Exhibit 3.1 to the Current Report on Form 8-K of DISH DBS Corporation filed December 12, 2008\).](#)
- 3.2(b)* [Bylaws of DISH DBS Corporation \(incorporated by reference from Exhibit 3.4\(b\) to the Registration Statement on Form S-4 of DISH DBS Corporation\).](#)
- 4.1* Registration Rights Agreement by and between DISH Network Corporation and Charles W. Ergen (incorporated by reference from Exhibit 4.8 to the Registration Statement on Form S-1 of DISH Network Corporation, Registration No. 33-91276). P
- 4.2* [Indenture, relating to the 5% Senior Notes due 2023, dated as of December 27, 2012 among DISH DBS Corporation, the guarantors named on the signature pages thereto and Wells Fargo Bank, National Association, as Trustee \(incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed December 27, 2012\).](#)
- 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 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 \(incorporated by reference from Exhibit 4.1 to the Current Report on Form 8 K of DISH Network Corporation filed March 20, 2017\).](#)
- 4.6* [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 \(incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed August 8, 2016\).](#)
- 4.7* [Supplemental Indenture relating to the 5% Senior Notes due 2023 \(incorporated by reference from Exhibit 4.14 to the Annual Report on Form 10-K of DISH DBS Corporation filed March 29, 2018\).](#)
- 4.8* [Supplemental Indenture relating to the 5 7/8% Senior Notes due 2024 \(incorporated by reference from Exhibit 4.15 to the Annual Report on Form 10-K of DISH DBS Corporation filed March 29, 2018\).](#)
- 4.9* [Supplemental Indenture relating to the 7 3/4% Senior Notes due 2026 \(incorporated by reference from Exhibit 4.16 to the Annual Report on Form 10-K of DISH DBS Corporation filed March 29, 2018\).](#)
- 4.10* [Description of Securities \(incorporated by reference from Exhibit 4.16 to the Annual Report on Form 10-K of DISH Network Corporation filed February 19, 2020\).](#)
- 4.11* [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 \(incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed July 1, 2020\).](#)

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- 4.12* [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 \(incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed December 22, 2020\).](#)
- 4.13* [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 \(incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed May 24, 2021\).](#)
- 4.14* [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 \(incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed November 26, 2021\).](#)
- 4.15* [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 \(incorporated by reference from Exhibit 4.2 to the Current Report on Form 8-K of DISH Network Corporation filed November 26, 2021\).](#)
- 4.16* [Loan and Security Agreement, dated as of November 26, 2021, between DISH DBS Corporation and DISH Network Corporation \(incorporated by reference from Exhibit 4.3 to the Current Report on Form 8-K of DISH Network Corporation filed November 26, 2021\).](#)
- 4.17* [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 \(incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed January 26, 2023\).](#)
- 4.18* [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 \(incorporated by reference from Exhibit 4.1 to the Current Report on Form 8-K of DISH Network Corporation filed November 15, 2022\).](#)
- 10.1* [2002 Class B CEO Stock Option Plan \(incorporated by reference from Appendix A to DISH Network Corporation's Definitive Proxy Statement on Schedule 14A dated April 9, 2002\).](#) **
- 10.2* [Whole RF Channel Service Agreement, dated February 4, 2004, between Telesat Canada and DISH Network Corporation \(incorporated by reference from Exhibit 10.4 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 6, 2004\).](#) ***
- 10.3* [Letter Amendment to Whole RF Channel Service Agreement, dated March 25, 2004, between Telesat Canada and DISH Network Corporation \(incorporated by reference to Exhibit 10.5 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 6, 2004\).](#) ***
- 10.4* [Second Amendment to Whole RF Channel Service Agreement, dated May 5, 2004, between Telesat Canada and DISH Network Corporation \(incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed August 9, 2004\).](#) ***
- 10.5* [Third Amendment to Whole RF Channel Service Agreement, dated October 12, 2004, between Telesat Canada and DISH Network Corporation \(incorporated by reference to Exhibit 10.22 to the Annual Report on Form 10-K of DISH Network Corporation filed March 16, 2005\).](#) ***

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- 10.6* [Incentive Stock Option Agreement \(Form A\) \(incorporated by reference to Exhibit 99.1 to the Current Report on Form 8-K of DISH Network Corporation filed July 7, 2005\).](#) **
- 10.7* [Incentive Stock Option Agreement \(Form B\) \(incorporated by reference to Exhibit 99.2 to the Current Report on Form 8-K of DISH Network Corporation filed July 7, 2005\).](#) **
- 10.8* [Restricted Stock Unit Agreement \(Form A\) \(incorporated by reference to Exhibit 99.3 to the Current Report on Form 8-K of DISH Network Corporation filed July 7, 2005\).](#) **
- 10.9* [Restricted Stock Unit Agreement \(Form B\) \(incorporated by reference to Exhibit 99.4 to the Current Report on Form 8-K of DISH Network Corporation filed July 7, 2005\).](#) **
- 10.10* [Nonemployee Director Stock Option Agreement \(incorporated by reference to Exhibit 99.6 to the Current Report on Form 8-K of DISH Network Corporation filed July 7, 2005\).](#) **
- 10.11* [Separation Agreement between EchoStar Corporation and DISH Network Corporation \(incorporated by reference from Exhibit 2.1 to the Amendment No. 1 to the Form 10 of EchoStar Corporation filed December 12, 2007\).](#)
- 10.12* [Tax Sharing Agreement between EchoStar Corporation and DISH Network Corporation \(incorporated by reference from Exhibit 10.2 to the Amendment No. 1 to the Form 10 of EchoStar Corporation filed December 12, 2007\).](#)
- 10.13* [Employee Matters Agreement between EchoStar Corporation and DISH Network Corporation \(incorporated by reference from Exhibit 10.3 to the Amendment No. 1 to the Form 10 of EchoStar Corporation filed December 12, 2007\).](#)
- 10.14* [Intellectual Property Matters Agreement between EchoStar Corporation, EchoStar Acquisition L.L.C., Echosphere L.L.C., DISH DBS Corporation, EIC Spain SL, EchoStar Technologies L.L.C. and DISH Network Corporation \(incorporated by reference from Exhibit 10.4 to the Amendment No. 1 to the Form 10 of EchoStar Corporation filed December 12, 2007\).](#)
- 10.15* [Form of Satellite Capacity Agreement between EchoStar Corporation and DISH Network L.L.C. \(incorporated by reference from Exhibit 10.28 to the Amendment No. 2 to Form 10 of EchoStar Corporation filed December 26, 2007\).](#)
- 10.16* [DISH Network Corporation 2009 Stock Incentive Plan \(incorporated by reference to Appendix A to DISH Network Corporation's Definitive Proxy Statement on Form 14A filed September 19, 2014\).](#) **
- 10.17* [Amended and Restated DISH Network Corporation 2001 Nonemployee Director Stock Option Plan \(incorporated by reference to Appendix B to DISH Network Corporation's Definitive Proxy Statement on Form 14A filed March 31, 2009\).](#) **
- 10.18* [Amended and Restated DISH Network Corporation 1999 Stock Incentive Plan \(incorporated by reference to Appendix C to DISH Network Corporation's Definitive Proxy Statement on Form 14A filed March 31, 2009\).](#) **
- 10.19* [NIMIQ 5 Whole RF Channel Service Agreement, dated September 15, 2009, between Telesat Canada and EchoStar Corporation \(incorporated by reference from Exhibit 10.30 to the Annual Report on Form 10-K of EchoStar Corporation filed March 1, 2010\).](#) ***
- 10.20* [Professional Services Agreement, dated August 4, 2009, between EchoStar Corporation and DISH Network Corporation \(incorporated by reference from Exhibit 10.3 to the Quarterly Report on Form 10-Q of EchoStar Corporation filed November 9, 2009\).](#) ***

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- 10.21* [Amended and Restated Investment Agreement, dated as of February 24, 2011, and First Amendment to Amended and Restated Investment Agreement, dated as of March 15, 2011, between DISH Network Corporation and DBSD North America, Inc. \(incorporated by reference from Exhibit 10.1 to the Current Report on Form 8-K of ICO Global Communications \(Holdings\) Limited filed March 17, 2011\).](#)
- 10.22* [Implementation Agreement, dated as of March 15, 2011, between DISH Network and ICO Global Communications \(Holdings\) Limited \(incorporated by reference from Exhibit 10.2 to the Current Report on Form 8-K of ICO Global Communications \(Holdings\) Limited filed March 17, 2011\).](#)
- 10.23* [Restructuring Support Agreement, dated as of March 15, 2011, between DISH Network and ICO Global Communications \(Holdings\) Limited \(incorporated by reference from Exhibit 10.3 to the Current Report on Form 8-K of ICO Global Communications \(Holdings\) Limited filed March 17, 2011\).](#)
- 10.24* [Purchase Agreement, dated as of June 14, 2011, by and among TerreStar Networks Inc., TerreStar License Inc., TerreStar National Services Inc., TerreStar Networks Holdings \(Canada\) Inc., TerreStar Networks \(Canada\) Inc., 0887729 B.C. Ltd., and Gamma Acquisition L.L.C. and DISH Network Corporation \(solely with respect to Section 6.19 thereof\) \(incorporated by reference from Exhibit 99.1 to the Current Report on Form 8-K of DISH Network Corporation filed June 16, 2011\).](#)
- 10.25* [Description of the 2013 Long-Term Incentive Plan dated November 30, 2012 \(incorporated by reference to the Current Report on Form 8-K of DISH Network Corporation filed December 6, 2012\).](#) **
- 10.26* [First Amended and Restated Credit Agreement dated October 13, 2014, among American AWS-3 Wireless II L.L.C., Northstar Wireless, LLC and Northstar Spectrum, LLC, as amended on February 12, 2015 \(incorporated by reference from Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 11, 2015\).](#) ***
- 10.27* [First Amended and Restated Credit Agreement dated October 13, 2014, among American AWS-3 Wireless III L.L.C., SNR Wireless LicenseCo, LLC and SNR Wireless HoldCo, LLC, as amended on February 12, 2015 \(incorporated by reference from Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 11, 2015\).](#) ***
- 10.28* [First Amended and Restated Limited Liability Company Agreement dated October 13, 2014, among Northstar Spectrum, LLC, Northstar Manager, LLC and American AWS-3 Wireless II L.L.C., as amended on February 12, 2015 \(incorporated by reference from Exhibit 10.3 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 11, 2015\).](#) ***
- 10.29* [First Amended and Restated Limited Liability Company Agreement dated October 13, 2014, among SNR Wireless HoldCo, LLC, SNR Wireless Management, LLC and American AWS-3 Wireless III L.L.C., as amended on February 12, 2015 \(incorporated by reference from Exhibit 10.4 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 11, 2015\).](#) ***
- 10.30* [Management Services Agreement dated September 12, 2014, between American AWS-3 Wireless II L.L.C. and Northstar Wireless, LLC \(incorporated by reference from Exhibit 10.5 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 11, 2015\).](#) ***
- 10.31* [Management Services Agreement dated September 12, 2014, between American AWS-3 Wireless III L.L.C. and SNR Wireless LicenseCo, LLC \(incorporated by reference from Exhibit 10.6 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 11, 2015\).](#) ***
- 10.32* [Second Amendment, dated October 1, 2015, to the First Amended and Restated Credit Agreement dated October 13, 2014, among American AWS-3 Wireless II L.L.C., Northstar Wireless, LLC and Northstar Spectrum, LLC, as first amended on February 12, 2015 \(incorporated by reference from Exhibit 10.1 to the Current Report on Form 8-K of DISH Network Corporation filed October 2, 2015\).](#)

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- 10.33* [Guaranty of Certain Obligations to FCC, dated as of October 1, 2015, made by DISH Network Corporation in favor of the Federal Communications Commission \(Northstar Wireless\) \(incorporated by reference from Exhibit 10.2 to the Current Report on Form 8-K of DISH Network Corporation filed October 2, 2015\).](#)
- 10.34* [Second Amendment, dated October 1, 2015, to the First Amended and Restated Credit Agreement dated October 13, 2014, among American AWS-3 Wireless III L.L.C., SNR Wireless LicenseCo, LLC and SNR Wireless HoldCo, LLC, as first amended on February 12, 2015 \(incorporated by reference from Exhibit 10.3 to the Current Report on Form 8-K of DISH Network Corporation filed October 2, 2015\).](#)
- 10.35* [Guaranty of Certain Obligations to FCC, dated as of October 1, 2015, made by DISH Network Corporation in favor of the Federal Communications Commission \(SNR Wireless\) \(incorporated by reference from Exhibit 10.4 to the Current Report on Form 8-K of DISH Network Corporation filed October 2, 2015\).](#)
- 10.36* [Form of Base/Additional Note Hedge Transaction Confirmation \(incorporated by reference from Exhibit 10.1 to the Current Report on Form 8-K of DISH Network Corporation filed August 8, 2016\).](#)
- 10.37* [Form of Base/Additional Warrant Transaction Confirmation \(incorporated by reference from Exhibit 10.2 to the Current Report on Form 8-K of DISH Network Corporation filed August 8, 2016\).](#)
- 10.38* [Description of the 2017 Long-Term Incentive Plan dated December 2, 2016 \(incorporated by reference from the Current Report on Form 8-K of DISH Network Corporation filed December 8, 2016\).**](#)
- 10.39* [Share Exchange Agreement dated January 31, 2017, between DISH Network Corporation, DISH Network L.L.C., DISH Operating L.L.C., EchoStar Corporation, EchoStar Broadcasting Holding Parent L.L.C., EchoStar Broadcasting Holding Corporation, EchoStar Technologies Holding Corporation, and EchoStar Technologies L.L.C. \(incorporated by reference from Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 1, 2017\).***](#)
- 10.40* [Second Amended and Restated Credit Agreement, dated March 31, 2018, by and among American AWS-3 Wireless II L.L.C., Northstar Wireless, LLC and Northstar Spectrum, LLC \(incorporated by reference from Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 8, 2018\).](#)
- 10.41* [Second Amended and Restated Credit Agreement, dated March 31, 2018, by and among American AWS-3 Wireless III L.L.C., SNR Wireless LicenseCo, LLC and SNR Wireless HoldCo, LLC \(incorporated by reference from Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 8, 2018\).](#)
- 10.42* [Second Amended and Restated Limited Liability Company Agreement of Northstar Spectrum, LLC, dated March 31, 2018, by and between Northstar Manager, LLC and American AWS-3 Wireless II L.L.C. \(incorporated by reference from Exhibit 10.3 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 8, 2018\).](#)
- 10.43* [Second Amended and Restated Limited Liability Company Agreement of SNR Wireless HoldCo, LLC, dated March 31, 2018, by and between SNR Wireless Management, LLC, John Muleta and American AWS-3 Wireless III L.L.C. \(incorporated by reference from Exhibit 10.4 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed May 8, 2018\).](#)
- 10.44* [Third Amended and Restated Credit Agreement, dated June 7, 2018, by and among American AWS-3 Wireless II L.L.C., Northstar Wireless, LLC and Northstar Spectrum, LLC \(incorporated by reference from Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed August 3, 2018\).](#)

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- 10.45* [Third Amended and Restated Credit Agreement, dated June 7, 2018, by and among American AWS-3 Wireless III L.L.C., SNR Wireless LicenseCo, LLC and SNR Wireless HoldCo, LLC \(incorporated by reference from Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed August 3, 2018\).](#)
- 10.46* [Third Amended and Restated Limited Liability Company Agreement of Northstar Spectrum, LLC, dated June 7, 2018, by and between Northstar Manager, LLC and American AWS-3 Wireless II L.L.C. \(incorporated by reference from Exhibit 10.3 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed August 3, 2018\).](#)
- 10.47* [Third Amended and Restated Limited Liability Company Agreement of SNR Wireless HoldCo, LLC, dated June 7, 2018, by and between SNR Wireless Management, LLC, John Muleta and American AWS-3 Wireless III L.L.C. \(incorporated by reference from Exhibit 10.4 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed August 3, 2018\).](#)
- 10.48* [Description of the 2019 Long-Term Incentive Plan dated August 17, 2018 \(incorporated by reference from the Current Report on Form 8-K of DISH Network Corporation filed August 23, 2018\).](#) **
- 10.49* [Incentive Stock Option Agreement \(incorporated by reference from Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed November 6, 2020\).](#) **
- 10.50* [Non-Qualified Stock Option Agreement \(incorporated by reference from Exhibit 10.2 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed November 6, 2020\).](#) **
- 10.51* [Restricted Stock Unit Agreement \(incorporated by reference from Exhibit 10.3 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed November 6, 2020\).](#) **
- 10.52* [Master Network Service Agreement, dated as of July 1, 2020, by and among DISH Network Corporation, DISH Purchasing Corporation, and T-Mobile USA, Inc. \(incorporated by reference from Exhibit 10.4 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed November 6, 2020\).](#)
- 10.53* [License Purchase Agreement, dated as of July 1, 2020, by and among DISH Network Corporation and T-Mobile USA, Inc. \(incorporated by reference from Exhibit 10.5 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed November 6, 2020\).](#)
- 10.54* [Purchase Agreement dated December 30, 2020, by and among American AWS-3 Wireless II L.L.C., Northstar Manager, LLC and Northstar Spectrum, LLC \(incorporated by reference from Exhibit 10.54 to the Annual Report on Form 10-K of DISH Network Corporation filed February 22, 2021\).](#)
- 10.55* [Network Services Agreement, dated as of July 14, 2021, by and among DISH Wireless L.L.C. and AT&T Mobility LLC \(incorporated by reference from Exhibit 10.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed November 4, 2021\).](#)***
- 99.1* [Department of Justice CDMA Letter to Defendants dated July 9, 2021 \(incorporated by reference from Exhibit 99.1 to the Quarterly Report on Form 10-Q of DISH Network Corporation filed August 9, 2021\).](#)
- 21□ [Subsidiaries of DISH Network Corporation.](#)
- 22□ [List of Subsidiary Guarantors.](#)
- 23□ [Consent of KPMG LLP, Independent Registered Public Accounting Firm.](#)
- 24□ [Power of Attorney authorizing Timothy A. Messner as signatory for Charles W. Ergen, Kathleen Q. Abernathy, George R. Brokaw, Stephen J. Bye, James DeFranco, Cantey M. Ergen, Tom A. Ortolf and Joseph T. Proietti.](#)

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- 31.1 [Section 302 Certification of Chief Executive Officer.](#)
- 31.2 [Section 302 Certification of Chief Financial Officer.](#)
- 32.1 [Section 906 Certification of Chief Executive Officer.](#)
- 32.2 [Section 906 Certification of Chief Financial Officer.](#)
- 101 The following materials from the Annual Report on Form 10-K of DISH Network Corporation for the year ended December 31, 2022, filed on February 23, 2023, 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.

DISH NETWORK CORPORATION

By: /s/ Paul W. Orban
Paul W. Orban
Executive Vice President and Chief Financial Officer

Date: February 23, 2023

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.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ W. Erik Carlson</u> W. Erik Carlson	President and Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	February 23, 2023
<u>/s/ Paul W. Orban</u> Paul W. Orban	Executive Vice President and Chief Financial Officer <i>(Principal Financial Officer)</i>	February 23, 2023
<u>/s/ James S. Allen</u> James S. Allen	Senior Vice President and Chief Accounting Officer <i>(Principal Accounting Officer)</i>	February 23, 2023
<u>* Charles W. Ergen</u>	Chairman	February 23, 2023
<u>* Kathleen Q. Abernathy</u>	Director	February 23, 2023
<u>* George R. Brokaw</u>	Director	February 23, 2023
<u>* Stephen J. Bye</u>	Director	February 23, 2023
<u>* James DeFranco</u>	Director	February 23, 2023
<u>* Cantey M. Ergen</u>	Director	February 23, 2023
<u>* Tom A. Ortolf</u>	Director	February 23, 2023
<u>* Joseph T. Proietti</u>	Director	February 23, 2023

* By: /s/ Timothy A. Messner
Timothy A. Messner
Attorney-in-Fact

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Consolidated Financial Statements:

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Consolidated Balance Sheets	F-4
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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors
DISH Network Corporation:

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

We have audited the accompanying consolidated balance sheets of DISH Network Corporation and subsidiaries (the Company) as of December 31, 2022 and 2021, 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, 2022, 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, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022 based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

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 had \$16.7 billion in revenue for the year ended December 31, 2022, of which \$12.5 billion was Pay-TV related and \$4.2 billion was Wireless related. Both 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. The number of revenue streams and the revenue-related IT applications required a high-degree of auditor judgment to evaluate the sufficiency of audit evidence over revenue. 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.

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 22, 2023

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

	As of December 31,	
	2022	2021
Assets		
<i>Current Assets:</i>		
Cash and cash equivalents	\$ 1,785,056	\$ 2,428,188
Marketable investment securities	835,983	2,975,518
Trade accounts receivable, net of allowance for credit losses of \$44,431 and \$38,534, respectively	953,812	942,561
Inventory	502,373	534,937
Other current assets	532,886	641,978
Total current assets	4,610,110	7,523,182
<i>Noncurrent Assets:</i>		
Restricted cash, cash equivalents and marketable investment securities	104,614	5,334,768
Property and equipment, net	5,640,119	3,257,787
FCC authorizations	36,933,073	28,632,665
Other investment securities	168,200	150,941
Operating lease assets	2,687,522	1,493,410
Other noncurrent assets, net	1,897,815	934,293
Intangible assets, net	565,109	674,679
Total noncurrent assets	47,996,452	40,478,543
Total assets	\$ 52,606,562	\$ 48,001,725
Liabilities and Stockholders' Equity (Deficit)		
<i>Current Liabilities:</i>		
Trade accounts payable	\$ 924,438	\$ 848,224
Deferred revenue and other	711,474	761,347
Accrued programming	1,298,777	1,376,770
Accrued interest	258,799	288,308
Other accrued expenses	1,283,570	1,179,427
Current portion of long-term debt and finance lease obligations (Note 10)	1,547,190	2,061,810
Total current liabilities	6,024,248	6,515,886
<i>Long-Term Obligations, Net of Current Portion:</i>		
Long-term debt and finance lease obligations, net of current portion (Note 10)	19,801,948	19,355,206
Deferred tax liabilities	4,930,135	4,226,266
Operating lease liabilities	2,687,883	1,453,395
Long-term deferred revenue and other long-term liabilities	753,708	527,859
Total long-term obligations, net of current portion	28,173,674	25,562,726
Total liabilities	34,197,922	32,078,612
Commitments and Contingencies (Note 15)		
Redeemable noncontrolling interests (Note 2)	464,359	395,222
<i>Stockholders' Equity (Deficit):</i>		
Class A common stock, \$0.01 par value, 1,600,000,000 shares authorized, 292,660,308 and 290,529,607 shares issued and outstanding, respectively	2,927	2,905
Class B common stock, \$0.01 par value, 800,000,000 shares authorized, 238,435,208 shares issued and outstanding	2,384	2,384
Additional paid-in capital	4,851,392	4,735,484
Accumulated other comprehensive income (loss)	(3,029)	281
Accumulated earnings (deficit)	13,088,850	10,785,617
Total DISH Network stockholders' equity (deficit)	17,942,524	15,526,671
Noncontrolling interests	1,757	1,220
Total stockholders' equity (deficit)	17,944,281	15,527,891
Total liabilities and stockholders' equity (deficit)	\$ 52,606,562	\$ 48,001,725

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

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

	For the Years Ended December 31,		
	2022	2021	2020
Revenue:			
Service revenue	\$ 16,005,620	\$ 16,890,729	\$ 14,846,024
Equipment sales and other revenue	673,787	990,377	647,411
Total revenue	<u>16,679,407</u>	<u>17,881,106</u>	<u>15,493,435</u>
Costs and Expenses (exclusive of depreciation):			
Cost of services	9,558,884	10,185,942	9,094,007
Cost of sales - equipment and other	1,812,191	1,552,341	939,721
Selling, general and administrative expenses	2,545,593	2,214,936	1,806,122
Impairment of long-lived assets (Note 2)	—	—	356,418
Depreciation and amortization	717,073	724,852	714,552
Total costs and expenses	<u>14,633,741</u>	<u>14,678,071</u>	<u>12,910,820</u>
Operating income (loss)	<u>2,045,666</u>	<u>3,203,035</u>	<u>2,582,615</u>
Other Income (Expense):			
Interest income	42,776	11,338	22,734
Interest expense, net of amounts capitalized	(22,781)	(16,174)	(12,974)
Other, net	1,038,982	20,557	(20,164)
Total other income (expense)	<u>1,058,977</u>	<u>15,721</u>	<u>(10,404)</u>
Income (loss) before income taxes	3,104,643	3,218,756	2,572,211
Income tax (provision) benefit, net	(731,736)	(762,810)	(698,275)
Net income (loss)	<u>2,372,907</u>	<u>2,455,946</u>	<u>1,873,936</u>
Less: Net income (loss) attributable to noncontrolling interests, net of tax	69,674	45,304	111,263
Net income (loss) attributable to DISH Network	<u>\$ 2,303,233</u>	<u>\$ 2,410,642</u>	<u>\$ 1,762,673</u>
Weighted-average common shares outstanding - Class A and B common stock:			
Basic	<u>530,114</u>	<u>527,844</u>	<u>524,761</u>
Diluted	<u>637,290</u>	<u>636,063</u>	<u>584,360</u>
Earnings per share - Class A and B common stock:			
Basic net income (loss) per share attributable to DISH Network	<u>\$ 4.34</u>	<u>\$ 4.57</u>	<u>\$ 3.36</u>
Diluted net income (loss) per share attributable to DISH Network	<u>\$ 3.61</u>	<u>\$ 3.79</u>	<u>\$ 3.02</u>
Comprehensive Income (Loss):			
Net income (loss)	<u>\$ 2,372,907</u>	<u>\$ 2,455,946</u>	<u>\$ 1,873,936</u>
<i>Other comprehensive income (loss):</i>			
Foreign currency translation adjustments	(4,160)	1,787	(827)
Unrealized holding gains (losses) on available-for-sale debt securities	191	(208)	(29)
Recognition of previously unrealized (gains) losses on available-for-sale securities included in net income (loss)	(7)	(13)	(62)
Deferred income tax (expense) benefit, net	666	(430)	81
Total other comprehensive income (loss), net of tax	<u>(3,310)</u>	<u>1,136</u>	<u>(837)</u>
Comprehensive income (loss)	<u>2,369,597</u>	<u>2,457,082</u>	<u>1,873,099</u>
Less: Comprehensive income (loss) attributable to noncontrolling interests, net of tax	69,674	45,304	111,263
Comprehensive income (loss) attributable to DISH Network	<u>\$ 2,299,923</u>	<u>\$ 2,411,778</u>	<u>\$ 1,761,836</u>

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

DISH NETWORK 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)	Noncontrolling Interests	Total	Redeemable Noncontrolling Interests
Balance, December 31, 2019	\$ 5,230	\$ 4,947,007	\$ (18)	\$ 6,612,302	\$ (449)	\$ 11,564,072	\$ 552,075
Issuance of Class A common stock:							
Exercise of stock awards	15	9,425	—	—	—	9,440	—
Employee benefits	8	28,293	—	—	—	28,301	—
Employee Stock Purchase Plan	8	17,966	—	—	—	17,974	—
Non-cash, stock-based compensation	—	64,954	—	—	—	64,954	—
Change in unrealized holding gains (losses) on available-for-sale debt securities, net	—	—	(91)	—	—	(91)	—
Deferred income tax (expense) benefit attributable to other comprehensive income (loss)	—	—	81	—	—	81	—
Foreign currency translation	—	—	(827)	—	—	(827)	—
Initial equity component of our 0% convertibles due 2025, net of deferred taxes of \$99,823	—	329,409	—	—	—	329,409	—
Northstar Spectrum LLC Purchase Agreement	—	—	—	—	—	—	(311,735)
Net income (loss) attributable to noncontrolling interests	—	—	—	—	955	955	110,308
Net income (loss) attributable to DISH Network	—	—	—	1,762,673	—	1,762,673	—
Other	—	3,720	—	—	(16)	3,704	—
Balance, December 31, 2020	\$ 5,261	\$ 5,400,774	\$ (855)	\$ 8,374,975	\$ 490	\$ 13,780,645	\$ 350,648
Issuance of Class A common stock:							
Exercise of stock awards	13	40,551	—	—	—	40,564	—
Employee benefits	9	30,312	—	—	—	30,321	—
Employee Stock Purchase Plan	6	17,733	—	—	—	17,739	—
Non-cash, stock-based compensation	—	51,680	—	—	—	51,680	—
Convertible debt reclassified per ASU 2020-06, net of deferred taxes of \$245,778 (Note 2)	—	(805,566)	—	—	—	(805,566)	—
Change in unrealized holding gains (losses) on available-for-sale debt securities, net	—	—	(221)	—	—	(221)	—
Deferred income tax (expense) benefit attributable to other comprehensive income (loss)	—	—	(430)	—	—	(430)	—
Foreign currency translation	—	—	1,787	—	—	1,787	—
Net income (loss) attributable to noncontrolling interests	—	—	—	—	730	730	44,574
Net income (loss) attributable to DISH Network	—	—	—	2,410,642	—	2,410,642	—
Balance, December 31, 2021	\$ 5,289	\$ 4,735,484	\$ 281	\$ 10,785,617	\$ 1,220	\$ 15,527,891	\$ 395,222
Issuance of Class A common stock:							
Exercise of stock awards	1	199	—	—	—	200	—
Employee benefits	8	26,340	—	—	—	26,348	—
Employee Stock Purchase Plan	13	17,919	—	—	—	17,932	—
Non-cash, stock-based compensation	—	71,450	—	—	—	71,450	—
Change in unrealized holding gains (losses) on available-for-sale debt securities, net	—	—	184	—	—	184	—
Deferred income tax (expense) benefit attributable to other comprehensive income (loss)	—	—	666	—	—	666	—
Foreign currency translation	—	—	(4,160)	—	—	(4,160)	—
Net income (loss) attributable to noncontrolling interests	—	—	—	—	537	537	69,137
Net income (loss) attributable to DISH Network	—	—	—	2,303,233	—	2,303,233	—
Balance, December 31, 2022	\$ 5,311	\$ 4,851,392	\$ (3,029)	\$ 13,088,850	\$ 1,757	\$ 17,944,281	\$ 464,359

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

DISH NETWORK CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	For the Years Ended December 31,		
	2022	2021	2020
Cash Flows From Operating Activities:			
Net income (loss)	\$ 2,372,907	\$ 2,455,946	\$ 1,873,936
<i>Adjustments to reconcile net income (loss) to net cash flows from operating activities:</i>			
Depreciation and amortization	717,073	724,852	714,552
Impairment of long-lived assets (Note 2)	—	—	356,418
Realized and unrealized losses (gains) on investments, derivatives and other	(1,040,651)	19,724	21,822
Non-cash, stock-based compensation	71,450	51,680	64,954
Deferred tax expense (benefit)	702,735	602,044	899,173
Changes in allowance for credit losses	5,819	(33,836)	28,622
Change in long-term deferred revenue and other long-term liabilities	86,039	(1,400)	(244,660)
Other, net	235,856	98,278	4,735
Changes in current assets and current liabilities, net			
Trade accounts receivable	(24,234)	209,456	(25,172)
Prepaid and accrued income taxes	(36,115)	81,197	(84,633)
Inventory	36,722	(167,985)	58,291
Other current assets	27,992	(62,356)	(271,227)
Trade accounts payable	79,116	101,034	73,268
Deferred revenue and other	(52,105)	(98,808)	(499)
Accrued programming and other accrued expenses	(90,504)	51,425	(157,804)
Net cash flows from operating activities	3,092,100	4,031,251	3,311,776
Cash Flows From Investing Activities:			
Purchases of marketable investment securities	(898,326)	(4,687,033)	(1,902,599)
Sales and maturities of marketable investment securities	3,023,236	2,069,343	1,944,748
Purchases of property and equipment	(2,727,302)	(1,185,642)	(413,302)
Capitalized interest related to FCC authorizations (Note 2)	(984,309)	(777,885)	(779,204)
Refund of FCC authorization deposit	—	337,490	—
Purchases of FCC authorizations, including deposits	(7,206,865)	(122,657)	(1,387,542)
Boost Mobile Acquisition	—	—	(1,312,500)
Other, net	6,527	(44,029)	(11,173)
Net cash flows from investing activities	(8,787,039)	(4,410,413)	(3,861,572)
Cash Flows From Financing Activities:			
Repayment of long-term debt and finance lease obligations	(83,117)	(89,876)	(100,536)
Redemption and repurchases of senior notes	(2,056,821)	(2,000,000)	(1,100,000)
Northstar Spectrum LLC Purchase Agreement	—	—	(311,735)
Proceeds from issuance of senior notes	2,000,000	6,750,000	1,000,000
Proceeds from issuance of convertible notes	—	—	2,000,000
Net proceeds from Class A common stock options exercised and stock issued under the Employee Stock Purchase Plan	18,132	58,303	27,414
Debt issuance costs and debt discount	(51,121)	(34,459)	(15,675)
Other, net	(18,413)	(24,540)	2
Net cash flows from financing activities	(191,340)	4,659,428	1,499,470
Net increase (decrease) in cash, cash equivalents, restricted cash and cash equivalents	(5,886,279)	4,280,266	949,674
Cash, cash equivalents, restricted cash and cash equivalents, beginning of period (Note 6)	7,734,260	3,453,994	2,504,320
Cash, cash equivalents, restricted cash and cash equivalents, end of period (Note 6)	<u>\$ 1,847,981</u>	<u>\$ 7,734,260</u>	<u>\$ 3,453,994</u>

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

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization and Business Activities

Principal Business

DISH Network Corporation is a holding company. Its subsidiaries (which together with DISH Network Corporation are referred to as “DISH Network,” the “Company,” “we,” “us” and/or “our,” unless otherwise required by the context) operate two primary business segments, Pay-TV and Wireless. Our Wireless business segment operates in two business units, Retail Wireless and 5G Network Deployment.

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 and Latino video programming services (“SLING TV”). As of December 31, 2022, we had 9.750 million Pay-TV subscribers in the United States, including 7.416 million DISH TV subscribers and 2.334 million SLING TV subscribers.

Wireless – Retail Wireless

We offer nationwide prepaid and postpaid retail wireless services to subscribers primarily under our Boost Mobile, Boost Infinite 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.

We are currently operating our Retail Wireless business unit as a mobile virtual network operator (“MVNO”) as we continue to complete our 5G Network Deployment. 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, 2022, we had 7.983 million Wireless subscribers.

Recent 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 recent preliminary conversations with CONX Corp. (an entity partially owned by Charles W. Ergen, our Chairman) regarding a transaction involving our Retail Wireless business. There can be no assurance that these preliminary discussions will lead to a transaction nor as to the structure or terms of any such transaction.

Wireless – 5G Network Deployment

We have invested a total of over \$30 billion in Wireless spectrum licenses, which includes over \$10 billion in noncontrolling investments in certain entities. The \$30 billion of investments related to Wireless spectrum licenses does not include \$7 billion of capitalized interest related to the carrying value of such licenses. See Note 2 and Note 15 for further information.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 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. We are currently focused on our progression towards offering 5G broadband service to at least 70% of the U.S. population with a minimum of 15,000 5G sites. As of December 31, 2022, we had started construction on over 15,000 5G sites, which, if completed, are capable of providing broadband coverage to over 60% of the U.S. population. Construction starts are continuing at a rate of approximately 1,000 5G sites per month.

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. In addition, as we complete our initial 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. 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. See Note 2 and 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 "FCC authorizations" 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. See Note 2 for further information.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

The AWS-3 Licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements. The Northstar Entities and/or the SNR Entities may need to raise significant additional capital in the future, which may be obtained from third party sources or from us, so that the Northstar Entities and the SNR Entities may commercialize, build-out and integrate these AWS-3 Licenses, comply with regulations applicable to such AWS-3 Licenses, and make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. Depending upon the nature and scope of such commercialization, build-out and integration efforts, regulatory compliance, and potential Northstar Re-Auction Payment and SNR Re-Auction Payment, any loans, equity contributions or partnerships could vary significantly.

There can be no assurance that we will be able to obtain a profitable return on our noncontrolling investments in the Northstar Entities and the SNR Entities. See Note 15 for further information.

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 DISH Network and our consolidated subsidiaries. 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 and recorded at fair value with changes recognized 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.

Redeemable Noncontrolling Interests

Northstar Wireless

Northstar Wireless is a wholly-owned subsidiary of Northstar Spectrum, which is an entity owned by Northstar Manager, LLC (“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. The consummation of the sale is subject to approval by the FCC. The value of the Northstar Put Right has accrued to approximately \$96 million as of December 31, 2022. If approved by the FCC, the sale will result in the elimination of all of our noncontrolling interest as it related to Northstar Wireless.

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 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. Northstar Manager's ownership interest in Northstar Spectrum was initially accounted for at fair value. Subsequently, Northstar Manager's ownership interest in Northstar Spectrum 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 Northstar Spectrum attributable to Northstar Manager 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.

SNR Wireless

SNR Wireless is a wholly-owned subsidiary of SNR HoldCo, which is an entity owned by SNR Wireless Management, LLC ("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. The consummation of the sale is subject to approval by the FCC. The value of the SNR Put Right has accrued to approximately \$368 million as of December 31, 2022. If approved by the FCC, the sale will result in the elimination of all of our noncontrolling interest as it related to SNR Wireless.

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.

As of December 31, 2022 and December 31, 2021, the aggregate value of Northstar Manager's ownership interest in Northstar Spectrum and SNR Management's ownership interest in SNR HoldCo was \$464 million and \$395 million, respectively, recorded as "Redeemable noncontrolling interests" on our Consolidated Balance Sheets.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States (“GAAP”) requires us to make 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 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, 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, 2022 and 2021 may consist of money market funds, government bonds, corporate notes and commercial paper. The cost of these investments approximates their fair value.

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).

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Trade Accounts Receivable

General Accounts Receivable

Trade accounts receivable 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 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.

BoostUP! Receivable

Certain long-term subscribers of Boost Mobile have the option to pay for their devices under an installment plan ("BoostUP!"), which is generally over a period of 18 months. The BoostUP! receivable is presented in our Consolidated Balance Sheets at its net realizable value, which is net of an allowance for credit losses. The allowance for credit losses is estimated based on among other factors, historical loss information and current economic conditions as well as forecasts of future economic conditions. As of December 31, 2022 and 2021, "Trade accounts receivable, net" on our Consolidated Balance Sheets includes \$17 million and \$44 million of BoostUP! receivables, net of allowance for credit losses of \$2 million and \$5 million, respectively.

Subscribers that participate in the BoostUP! program typically make a down payment and satisfy their obligation by providing equal monthly payments during the duration of their financing arrangement. As Boost Mobile subscribers are on a month to month contract for service with Boost Mobile and the BoostUP! arrangement provides that upon an installment plan subscribers' termination of the service the installment balance becomes due and payable immediately, we do not impute interest on these instruments as the financial instruments are short term in nature.

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.

Property and Equipment

Property and equipment, including capitalized expenditures related to our wireless projects and 5G Network Deployment, 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 set-top boxes are generally capitalized when they are installed in customers' homes.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 two 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. Costs related to the procurement and development of software for internal-use are capitalized and amortized using the straight-line method 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 as either an increase or decrease to both the asset retirement obligation and initial costs capitalized resulting from 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.

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. This instrument meets the definition of a derivative and was valued at its acquisition date fair value of \$713 million. The derivative is remeasured quarterly. All changes in the derivative's fair value are recorded in "Other, net" in our Consolidated Statements of Operations and Comprehensive Income (Loss).

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. Once 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. Assets which are to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell.

The carrying amount of a long-lived asset or asset group is considered impaired when the anticipated undiscounted cash flows from such asset or asset group is less than its carrying amount. In that event, 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. 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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, 2022 and 2021. We will continue to monitor the DBS satellite fleet for indicators of impairment.

AWS-4 Satellites

We historically evaluated our AWS-4 satellite fleet for impairment whenever events or changes in circumstances indicate that its carrying amount may not be recoverable. In light of, among other things, certain developments related to the Sprint/T-Mobile merger, during the first quarter of 2020, we determined that revisions to the AWS-4 build-out deadlines were probable, which we determined to be a triggering event. Accordingly, we quantitatively assessed the value of the AWS-4 satellites (T1 and D1) and wrote down the fair value of the satellites to their estimated fair value of zero, resulting in a \$103 million non-cash impairment charge in "Impairment of long-lived assets" on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Narrowband IoT Network

As discussed in Note 16 in our Annual Report on Form 10-K for the year ended December 31, 2021, in March 2017 we notified the FCC that we planned to deploy a narrowband IoT network. In October 2019, we paused work on the narrowband IoT deployment. In light of, among other things, certain developments related to the Sprint/T-Mobile merger, during the first quarter of 2020, we determined that the revision of certain of our build-out deadlines were probable. Based on this, we no longer intended to complete our narrowband IoT deployment, which we considered a triggering event. As such, during the first quarter of 2020, we reviewed the capitalized costs of equipment, labor and other assets related to the narrowband IoT deployment, including our operating lease assets, and impaired those items that would not be utilized in our ongoing 5G Network Deployment, resulting in a \$253 million non-cash impairment charge in "Impairment of long-lived assets" on our Consolidated Statements of Operations and Comprehensive Income (Loss).

Impairment of long-lived assets recorded during the year ended December 31, 2020 consisted of the following:

	For the Year Ended December 31, 2020	
	(In thousands)	
T1 satellite	\$	48,120
D1 satellite		55,000
Construction in progress related to narrowband IoT deployment		226,742
Operating lease assets related to narrowband IoT deployment		26,556
Impairment of long-lived assets	\$	356,418

Finite-Lived Intangible Assets

Intangible assets include subscriber relationships, tradenames, 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, 2022 and 2021.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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. 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 DBS 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 2022, 2021 and 2020, 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.

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 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 and the Northstar Licenses and SNR Licenses into a single unit of accounting. In 2020, we combined our 600 MHz, 700 MHz, AWS-4, H Block, and the Northstar Licenses and SNR Licenses into a single unit of accounting, excluding the High-Band Licenses.

In 2022, we quantitatively assessed these licenses for impairment. Our quantitative assessment consisted of both an income approach performed by DISH Network and a market approach performed by a third party and reviewed by management.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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.

Income Approach. The income approach estimated the fair value of these licenses using the “Greenfield” approach. The Greenfield approach is an income based valuation approach that values the Wireless spectrum licenses by calculating the cash flow generating potential of a hypothetical start-up company that goes into business with no assets except the Wireless spectrum licenses to be valued. A discounted cash flow analysis is used to estimate what a marketplace participant would be willing to pay to purchase the aggregated Wireless spectrum licenses as of the valuation date. As a result, we were required to make significant estimates about future cash flows and profitability specifically associated with our Wireless spectrum licenses, an appropriate discount rate based on the risk associated with those estimated cash flows and assumed terminal value and growth rates. We considered current and expected future economic conditions, current and expected availability of wireless network technology and infrastructure and related equipment and the costs thereof as well as other relevant factors in estimating future cash flows and profitability.

The discount rate represented our estimate of the weighted-average cost of capital (“WACC”), or expected return, that a marketplace participant would have required as of the valuation date. We developed the discount rate based on our consideration of the cost of debt and equity of a group of guideline companies as of the valuation date. Accordingly, our discount rate incorporated our estimate of the expected return a marketplace participant would have required as of the valuation date, including the risk premium associated with the current and expected economic conditions as of the valuation date.

As part of our impairment 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

In 2021 and 2020, 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 2020, our 37 GHz, 39 GHz, and 47 GHz wireless spectrum licenses were assessed as a single unit of accounting. These licenses were purchased during 2020 through our participation in Auction 103. For 2020, management's assessment of the fair value of these licenses was determined based on the auction results.

During 2022, 2021, and 2020, our multichannel video distribution and data service ("MVDDS") wireless spectrum licenses were assessed as a single unit of accounting. For 2022, 2021 and 2020, 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.

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. Substantially all our goodwill relates to our Wireless segment and its two reporting units.

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 maybe possible. We may consider qualitative factors to assess if it is more likely than not that the fair value for goodwill or indefinite-lived intangible assets is below the carrying amount. We may also elect to bypass the qualitative assessment and perform a quantitative assessment.

To complete the impairment assessment we make estimates about fair value by reporting unit by using a weighting of the income and the market approach. As detailed above in "*Wireless Spectrum Licenses*" the income approach is based on estimated discounted cash flows using a market participant discount rate. The market approach is based on the fair value of our spectrum licenses 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.

Each of the reporting units were reviewed for impairment using a quantitative assessment. In performing the quantitative impairment test for 2022, we determined that the fair value of its reporting units exceeded the carrying amount and, as such, these reporting units were not impaired.

In conducting our annual impairment test for 2021 and 2020, we performed a qualitative assessment, which considered several factors, including, among others, macroeconomic conditions, industry and market conditions, and relevant company specific events and perception of the market. In contemplating all factors in their totality, we determined that the fair value of our Wireless segment, which consists of a single reporting unit, was in excess of the carrying amount.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 preparing for the commercialization of 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. The qualifying assets exceed the carrying value of our long-term debt and finance lease obligations, therefore substantially all of our interest expense is being capitalized. However, as the qualifying assets are placed into service, we will cease to capitalize interest on those assets placed into service.

Business Combinations

When we acquire a business, 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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
- 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, 2022 and 2021, 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. 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 using the effective interest rate method over the terms of the respective notes. Any debt discount is deferred and amortized to interest expense using the effective interest rate method over the terms of the respective notes. 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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.

Wireless Segment

Our 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 the Boost Infinite brand. Prepaid subscribers prepay for their monthly service on a month-to-month contract. 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. For both our prepaid and postpaid customers the contract term was determined to be one month.

We have both an indirect sales channel, which includes third-party owned retail stores and big box stores, as well as 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. Although our Retail Wireless business offers both products and services, we have determined that no bundled arrangements exist as the wireless device and service sold are sold at different times, and in the case of the indirect sales channel, have different customers. In the indirect channel, the customer for the wireless device is the direct distribution partner whereas for the service the subscriber is the end consumer. 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 for the indirect sales channel or the end user in the direct sales channel. 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.

Contract Balances

The timing of revenue recognition generally differs from the timing of invoicing to customers. When revenue is recognized prior to invoicing, we record a receivable. When revenue is recognized subsequent to invoicing, we record deferred revenue. 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 as we apply a practical expedient 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. 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Assets Recognized Related to the Costs to Obtain a Contract with a Subscriber

We recognize an asset for the incremental costs of obtaining a contract with a subscriber if we expect the benefit of those costs to be longer than one year. We have determined that certain sales incentive programs in both our Pay-TV and 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 subscriber life. During the years ended December 31, 2022, 2021 and 2020, we capitalized \$347 million, \$393 million and \$316 million, respectively, under these programs. The amortization expense related to these programs was \$423 million, \$391 million and \$160 million for the years ended December 31, 2022, 2021 and 2020, respectively. As of December 31, 2022 and 2021, we had a total of \$381 million and \$458 million, respectively, capitalized on our Consolidated Balance Sheets. 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

We enter into non-cancelable operating and finance leases for, among other things, communication towers, satellites, 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 15 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. 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 plus a credit spread as secured by our assets. The operating lease ROU asset also includes the impact of prepaid or deferred lease payments. 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.

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 revenue related to equipment leased to new and existing DISH TV subscribers would have otherwise been accounted for as an operating lease.

Cost of Services

“Cost of services” on our Consolidated Statements of Operations and Comprehensive Income (Loss) principally includes Pay-TV programming expenses and other operating costs related to our Pay-TV segment and costs of Wireless services (including costs incurred under the MNSA and NSA).

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. Costs incurred under the MNSA and NSA are recognized as the services are performed or as incurred.

Cost of Sales – Equipment and Other

“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, 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.

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 \$633 million, \$535 million and \$528 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Research and Development

Research and development costs 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). Research and development costs totaled \$45 million, \$29 million and \$24 million for the years ended December 31, 2022, 2021 and 2020, respectively.

New Accounting Pronouncements

We do not expect that any recently issued accounting pronouncements will have a material effect on our consolidated financial statements.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 DISH Network” 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 3 3/8% Convertible Notes due 2026 issued August 8, 2016 (the “Convertible Notes due 2026”), our 2 3/8% Convertible Notes due 2024 issued March 17, 2017 (the “Convertible Notes due 2024”) and our 0% Convertible Notes due 2025 issued December 21, 2020 (the “Convertible Notes due 2025,” and collectively with the Convertible Notes due 2026 and the Convertible Notes due 2024, the “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 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).

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,		
	2022	2021	2020
	(In thousands, except per share amounts)		
Net income (loss)	\$ 2,372,907	\$ 2,455,946	\$ 1,873,936
Less: Net income (loss) attributable to noncontrolling interests, net of tax	69,674	45,304	111,263
Net income (loss) attributable to DISH Network - Basic	2,303,233	2,410,642	1,762,673
Interest on dilutive Convertible Notes, net of tax (1)	—	—	—
Net income (loss) attributable to DISH Network - Diluted	\$ 2,303,233	\$ 2,410,642	\$ 1,762,673
Weighted-average common shares outstanding - Class A and B common stock:			
Basic	530,114	527,844	524,761
Dilutive impact of Convertible Notes (2)	107,016	107,016	59,526
Dilutive impact of stock awards outstanding	160	1,203	73
Diluted	637,290	636,063	584,360
Earnings per share - Class A and B common stock:			
Basic net income (loss) per share attributable to DISH Network	\$ 4.34	\$ 4.57	\$ 3.36
Diluted net income (loss) per share attributable to DISH Network	\$ 3.61	\$ 3.79	\$ 3.02

- (1) For the years ended December 31, 2022, 2021 and 2020, substantially all of our interest expense was capitalized. See Note 2 for further information.
- (2) The impact of the potential dilution from conversion of our 0% Convertible Notes due 2025, as discussed above, is included assuming conversion as of the December 21, 2020 issuance date into approximately 48.8 million shares of our Class A common stock.

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 approximately \$86.08 per share, subject to certain adjustments. As a consequence, the following are not included in the diluted EPS calculation.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

	As of December 31,		
	2022	2021	2020
	(In thousands)		
Anti-dilutive stock awards	9,437	7,582	9,083
Performance/market based options	15,061	13,954	17,403
Restricted Performance Units/Awards	1,106	1,331	1,755
Common stock warrants	46,029	46,029	46,029
Total	71,633	68,896	74,270

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,		
	2022	2021	2020
	(In thousands)		
Cash paid for interest (including capitalized interest)	\$ 1,044,276	\$ 781,874	\$ 778,448
Cash received for interest	8,145	5,455	5,945
Cash paid for income taxes	60,335	212,491	150,885
Capitalized interest (1)	1,040,971	821,455	924,644
Initial equity component of our 0% Convertible Notes due 2025, net of deferred taxes of \$99,823	—	—	329,409
Employee benefits paid in Class A common stock	26,348	30,321	28,301
Convertible debt reclassified per ASU 2020-06	—	1,051,344	—
Deferred taxes reclassified per ASU 2020-06	—	245,778	—
Vendor financing	108,048	26,627	74,895
FCC licenses reclassification (2)	122,657	915,449	—
Accrued wireless equipment purchases	397,137	449,093	3,680
Asset retirement obligation	122,390	50,765	—
Revaluation of contingent liabilities	47,916	—	—

- (1) See Note 2 for further information.
(2) See Note 15 for further information.

5. Other Comprehensive Income (Loss)

The following table presents the tax effect on each component of “Other comprehensive income (loss).”

	For the Years Ended December 31,								
	2022			2021			2020		
	Before Tax	Tax (Expense) Benefit	Net of Tax	Before Tax	Tax (Expense) Benefit	Net of Tax	Before Tax	Tax (Expense) Benefit	Net of Tax
	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount
	(In thousands)								
Foreign currency translation adjustments	\$ (4,160)	\$ 710	\$ (3,450)	\$ 1,787	\$ (482)	\$ 1,305	\$ (827)	\$ 61	\$ (766)
Unrealized holding gains (losses) on available-for-sale securities	191	(46)	145	(208)	49	(159)	(29)	7	(22)
Recognition of previously unrealized (gains) losses on available-for-sale securities included in net income (loss)	(7)	2	(5)	(13)	3	(10)	(62)	13	(49)
Other comprehensive income (loss)	\$ (3,976)	\$ 666	\$ (3,310)	\$ 1,566	\$ (430)	\$ 1,136	\$ (918)	\$ 81	\$ (837)

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

The “Accumulated other comprehensive income (loss)” is detailed in the following table, net of tax:

Accumulated Other Comprehensive Income (Loss)	Foreign Currency Translation Adjustment	Unrealized/ Recognized Gains (Losses)	Total
	(In thousands)		
Balance as of December 31, 2020	\$ (859)	\$ 4	\$ (855)
Foreign currency translation adjustments	1,305	—	1,305
Other comprehensive income (loss) before reclassification	—	(159)	(159)
Amounts reclassified from accumulated other comprehensive income (loss)	—	(10)	(10)
Balance as of December 31, 2021	\$ 446	\$ (165)	\$ 281
Foreign currency translation adjustments	(3,450)	—	(3,450)
Other comprehensive income (loss) before reclassification	—	145	145
Amounts reclassified from accumulated other comprehensive income (loss)	—	(5)	(5)
Balance as of December 31, 2022	\$ (3,004)	\$ (25)	\$ (3,029)

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,	
	2022	2021
	(In thousands)	
Marketable investment securities:		
Current marketable investment securities:		
Strategic - available-for-sale	\$ 144	\$ 152
Strategic - trading/equity	655	1,895
Other	835,184	2,973,471
Total current marketable investment securities	835,983	2,975,518
Restricted marketable investment securities (1)	41,689	28,696
Total marketable investment securities	877,672	3,004,214
Restricted cash and cash equivalents (1)	62,925	5,306,072
Other investment securities:		
Other investment securities	168,200	150,941
Total other investment securities	168,200	150,941
Total marketable investment securities, restricted cash and cash equivalents, and other investment securities	\$ 1,108,797	\$ 8,461,227

(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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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, 2022, 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, 2022 and 2021, 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.

In addition, as of December 31, 2021, our restricted marketable investment securities, together with our restricted cash and cash equivalents include the proceeds from the issuance of our 5 1/4% Senior Secured Notes due 2026 and our 5 3/4% Senior Secured Notes due 2028, which included certain restrictions which varied in nature depending on the ultimate use of proceeds. The cash proceeds were paid to the FCC in connection with our wholly-owned subsidiary Weminuche L.L.C.’s (“Weminuche”) winning bids in the FCC’s auction for the Flexible-Use Service Licenses in the 3.45–3.55 GHz band (“Auction 110”). See Note 10 for further information.

Other Investment Securities

We have strategic investments in certain debt and/or equity securities that are included in noncurrent “Other investment securities” on our Consolidated Balance Sheets. Our debt securities are classified as available-for-sale and our equity securities are accounted for using the equity method of accounting or recorded at fair value. 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Invidi Technologies Corporation. In November 2016, we, AT&T Inc., and Cavendish Square Holding B.V., an affiliate of WPP plc, entered into a series of agreements to acquire Invidi Technologies Corporation (“Invidi”), an entity that provides proprietary software for the addressable advertising market.

TerreStar Solutions, Inc. In March 2019, we closed a transaction with TerreStar Solutions, Inc. (“TSI”) to acquire additional equity securities of TSI, an entity that holds certain 2 GHz wireless spectrum licenses in Canada, in exchange for certain Canadian assets, including, among other things, a portion of the satellite capacity on our T1 satellite, which we had acquired from TerreStar Networks, Inc. in 2012.

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,							
	2022				2021			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
	(In thousands)							
Cash equivalents (including restricted)	\$ 1,620,458	\$ 174,050	\$ 1,446,408	\$ —	\$ 7,592,696	\$ 83,302	\$ 7,509,394	\$ —
Debt securities (including restricted):								
U.S. Treasury and agency securities	\$ 22,824	\$ 22,824	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Commercial paper	696,324	—	696,324	—	2,533,875	—	2,533,875	—
Corporate securities	156,380	—	156,380	—	462,999	—	462,999	—
Other	1,489	—	1,345	144	5,445	—	5,293	152
Equity securities	655	655	—	—	1,895	1,895	—	—
Total	\$ 877,672	\$ 23,479	\$ 854,049	\$ 144	\$ 3,004,214	\$ 1,895	\$ 3,002,167	\$ 152

As of December 31, 2022, restricted and non-restricted marketable investment securities included debt securities of \$875 million with contractual maturities within one year and \$2 million with contractual maturities extending longer than one year through and including five years. Actual maturities may differ from contractual maturities as a result of our ability to sell these securities prior to maturity.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Derivative Instruments

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. This instrument meets the definition of a derivative and was 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, 2022 and 2021, the derivative's fair value was \$1.693 billion and \$678 million, respectively, and is included in "Other noncurrent assets, net" on our Consolidated Balance Sheets. The change in the derivative's fair value was primarily driven by Level 3 current market data indicative of pricing of similar assets and an increase in our probability of exercising the option, which resulted in an increase in our estimate of our derivative's underlying asset value. Substantially all of the change in the derivative's fair value occurred in the fourth quarter of 2022. All changes in the derivative's fair value are recorded in "Other, net" on our Consolidated Statements of Operations and Comprehensive Income (Loss) until the option is either exercised or expires. See the table below. If we elect to exercise the option and purchase these licenses, we will record the licenses at fair value at that date in "FCC authorizations" on our Consolidated Balance Sheets. If we elect to not exercise the option or it expires, we will expense the derivative's fair value at that date on our Consolidated Statements of Operations and Comprehensive Income (Loss) and are potentially subject to pay T-Mobile a fee of approximately \$72 million per the Spectrum Purchase Agreement under certain circumstances. See Note 15 for more information.

We account for our option to purchase certain T-Mobile's 800 MHz spectrum licenses under the Spectrum Purchase Agreement as a Level 3 derivative.

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,		
	2022	2021	2020
	(In thousands)		
Marketable investment securities - realized and unrealized gains (losses)	\$ (1,241)	\$ (3,137)	\$ 178
Derivative instruments - net realized and/or unrealized gains (losses) (1)	1,015,387	(13,000)	(22,000)
Non-marketable investment securities - gains (losses)	27,427	—	—
Costs related to early redemption of debt	(922)	(3,587)	—
Equity in earnings (losses) of affiliates	2,616	(1,051)	410
Other	(4,285)	41,332	1,248
Total	\$ 1,038,982	\$ 20,557	\$ (20,164)

- (1) The change in the derivative's fair value was primarily driven by Level 3 current market data indicative of pricing of similar assets and an increase in our probability of exercising the option, which resulted in an increase in our estimate of our derivative's underlying asset value. See above for further information on our valuation of derivative instruments.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

7. Inventory

Inventory consisted of the following:

	As of December 31,	
	2022	2021
	(In thousands)	
Finished goods	\$ 447,322	\$ 489,073
Work-in-process and service repairs	19,351	19,074
Raw materials	35,700	26,790
Total inventory	\$ 502,373	\$ 534,937

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,	
		2022	2021
		(In thousands)	
Equipment leased to customers	2 - 5	\$ 1,318,272	\$ 1,530,943
Satellites	4 - 15	1,718,865	1,734,024
Satellites acquired under finance lease agreements	15	344,447	567,870
Furniture, fixtures, equipment and other	2 - 20	1,215,496	1,197,409
5G Network Deployment equipment	3 - 15	770,153	76,828
Software	3 - 6	1,354,656	1,076,602
Buildings and improvements	5 - 40	380,519	376,952
Land	-	17,513	17,513
Construction in progress	-	3,170,623	1,309,757
Total property and equipment		10,290,544	7,887,898
Accumulated depreciation		(4,650,425)	(4,630,111)
Property and equipment, net		\$ 5,640,119	\$ 3,257,787

Construction in progress consisted of the following:

	As of December 31,	
	2022	2021
	(In thousands)	
Pay-TV	\$ 36,936	\$ 39,269
Wireless	3,133,687	1,270,488
Total construction in progress	\$ 3,170,623	\$ 1,309,757

Depreciation and amortization expense consisted of the following:

	For the Years Ended December 31,		
	2022	2021	2020
	(In thousands)		
Equipment leased to customers	\$ 191,746	\$ 244,755	\$ 290,081
Satellites	148,051	189,126	202,724
Buildings, furniture, fixtures, equipment and other (1)	223,735	126,661	128,876
Intangible assets	153,541	164,310	92,871
Total depreciation and amortization	\$ 717,073	\$ 724,852	\$ 714,552

(1) This increase primarily resulted from depreciation expense related to software and certain assets placed into service in connection with our 5G Network Deployment.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Cost of sales and operating expense categories included in our accompanying Consolidated Statements of Operations and Comprehensive Income (Loss) do not include depreciation expense related to satellites or equipment leased to customers.

Satellites

Pay-TV Satellites. We currently utilize 11 satellites in geostationary orbit approximately 22,300 miles above the equator, seven of which we own and depreciate over their estimated useful life. We currently utilize certain capacity on one satellite that we lease from EchoStar, which is accounted for as an operating lease. We also lease three satellites from third parties: Ciel II, which is accounted for as an operating lease, Nimiq 5, which is accounted for as a financing lease and is depreciated over its economic life, and the Anik F3 satellite, which was accounted for as a finance lease until April 2022 and was fully depreciated. During April 2022, we extended the Anik F3 lease and as a result it is currently accounted for as an operating lease.

As of December 31, 2022, our pay-TV 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 XXVIII	June 2016	61.5	N/A
EchoStar XXIII	March 2017	110	N/A
Leased from EchoStar (1):			
EchoStar IX (2)	August 2003	121	December 2022
Leased from Other Third Party:			
Anik F3 (3)	April 2007	118.7	April 2025
Ciel II	December 2008	129	July 2023
Nimiq 5	September 2009	72.7	September 2024

- (1) See Note 19 for further information on our Related Party Transactions with EchoStar.
- (2) As of December 31, 2022, we no longer lease this satellite.
- (3) During April 2022, we extended the Anik F3 satellite lease for an additional two years with an option to renew for one additional year to April 2025.

AWS-4 Satellites

Satellites	Launch Date	Degree Orbital Location	Estimated Useful Life (Years)
Owned:			
T1	July 2009	111.1	14.25
D1	April 2008	92.85	N/A

GAAP requires that a long-lived asset be reviewed for impairment when circumstances indicate that the carrying amount of the asset might not be recoverable.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

During the first quarter of 2020, in light of, among other things, certain developments related to the Sprint/T-Mobile merger, we determined that revisions to the AWS-4 build-out deadlines were probable, which we determined to be a triggering event. Accordingly, we quantitatively assessed the value of the AWS-4 satellites (T1 and D1) and wrote down the fair value of the satellites to their estimated fair value of zero, resulting in a \$103 million non-cash charge recorded in “Impairment of long-lived assets” during the year ended December 31, 2020 on our Consolidated Statements of Operations and Comprehensive Income (Loss).

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.

Intangible Assets

As of December 31, 2022 and 2021, our identifiable intangibles subject to amortization consisted of the following:

	As of			
	December 31, 2022		December 31, 2021	
	Intangible Assets	Accumulated Amortization	Intangible Assets	Accumulated Amortization
	(In thousands)			
Technology-based	\$ 63,545	\$ (60,022)	\$ 63,361	\$ (59,462)
Trademarks	135,134	(61,007)	135,131	(50,524)
Contract-based	41,500	(41,500)	41,500	(41,500)
Customer relationships	628,598	(366,357)	582,395	(223,859)
Total	\$ 868,777	\$ (528,886)	\$ 822,387	\$ (375,345)

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 \$154 million, \$164 million and \$93 million for the years ended December 31, 2022, 2021 and 2020, respectively. The increase in amortization expense during 2021 primarily resulted from the Republic Wireless Acquisition.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Estimated future amortization of our identifiable intangible assets as of December 31, 2022 is as follows (in thousands):

For the Years Ended December 31,		(In thousands)
2023	\$	180,621
2024		95,641
2025		13,535
2026		11,838
2027		11,355
Thereafter		26,901
Total	\$	339,891

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. The non-recurring measurement of fair value of goodwill is classified as Level 3 in the fair value hierarchy. As of December 31, 2022 and 2021, our goodwill was \$225 million and \$225 million, respectively, which substantially all relates to our Wireless segment, with \$120 million and \$99 million related to our 5G Network Deployment business unit and our Retail Wireless business unit, respectively.

FCC Authorizations

As of December 31, 2022 and 2021, our FCC Authorizations consisted of the following:

	As of December 31,	
	2022	2021
	(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	6,212,579	6,211,154
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	2,688	2,580
3.45-3.55 GHz Licenses	7,327,989	—
Subtotal	19,698,169	12,368,647
Noncontrolling Investments:		
Northstar	5,618,930	5,618,930
SNR	4,271,459	4,271,459
Total AWS-3 Licenses	9,890,389	9,890,389
Capitalized Interest (1)	7,344,515	6,373,629
Total	\$ 36,933,073	\$ 28,632,665

(1) See Note 2 for further information.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

9. Leases

We enter into non-cancelable operating and finance leases for, among other things, communication towers, satellites, 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 15 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.

During the fourth quarter of 2021, our QuetzSat-1 finance lease expired. Through the first quarter of 2022, our Anik F3 and Nimiq 5 satellites were accounted for as finance leases. 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,		
	2022	2021	2020
	(In thousands)		
Operating lease cost (1)	\$ 332,385	\$ 89,565	\$ 71,863
Short-term lease cost (2)	13,328	12,956	11,870
Finance lease cost:			
Amortization of right-of-use assets (3)	28,037	65,967	71,318
Interest on lease liabilities (3)	12,145	14,693	21,007
Total finance lease cost (3)	40,182	80,660	92,325
Total lease costs	\$ 385,895	\$ 183,181	\$ 176,058

- (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 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.

Supplemental cash flow information related to leases was as follows:

	For the Years Ended December 31,		
	2022	2021	2020
	(In thousands)		
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash flows from operating leases	\$ 163,320	\$ 72,479	\$ 72,352
Operating cash flows from finance leases	\$ 11,053	\$ 12,868	\$ 21,007
Financing cash flows from finance leases	\$ 42,617	\$ 62,679	\$ 65,979
Right-of-use assets obtained in exchange for lease obligations:			
Operating leases	\$ 1,398,050	\$ 1,467,983	\$ 47,225
Finance leases	\$ 66,312	\$ —	\$ —

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Supplemental balance sheet information related to leases was as follows:

	As of December 31,	
	2022	2021
	(In thousands)	
Operating Leases:		
Operating lease assets (1)	\$ 2,687,522	\$ 1,493,410
Other current liabilities	\$ 194,030	\$ 75,748
Operating lease liabilities (1)	2,687,883	1,453,395
Total operating lease liabilities	\$ 2,881,913	\$ 1,529,143
Finance Leases:		
Property and equipment, gross	\$ 411,778	\$ 568,889
Accumulated depreciation	(303,802)	(499,188)
Property and equipment, net	\$ 107,976	\$ 69,701
Other current liabilities	\$ 48,066	\$ 34,772
Other long-term liabilities	75,287	64,886
Total finance lease liabilities	\$ 123,353	\$ 99,658
Weighted Average Remaining Lease Term:		
Operating leases	11.8 years	12.9 years
Finance leases	2.7 years	2.6 years
Weighted Average Discount Rate:		
Operating leases	7.3%	5.3%
Finance leases	9.8%	11.0%

(1) The increase in operating lease assets and liabilities primarily related to communication tower leases.

Maturities of lease liabilities as of December 31, 2022 were as follows:

For the Years Ending December 31,	Maturities of Lease Liabilities		
	Operating Leases	Finance Leases	Total
	(In thousands)		
2023	\$ 268,453	\$ 58,031	\$ 326,484
2024	298,054	49,450	347,504
2025	328,988	20,045	349,033
2026	357,711	12,905	370,616
2027	360,164	—	360,164
Thereafter	2,898,888	—	2,898,888
Total lease payments	4,512,258	140,431	4,652,689
Less: Imputed interest	(1,630,345)	(17,078)	(1,647,423)
Total	2,881,913	123,353	3,005,266
Less: Current portion	(194,030)	(48,066)	(242,096)
Long-term portion of lease obligations	\$ 2,687,883	\$ 75,287	\$ 2,763,170

DISH NETWORK 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, 2022 and 2021:

	As of			
	December 31, 2022		December 31, 2021	
	Carrying Amount	Fair Value	Carrying Amount	Fair Value
	(In thousands)			
5 7/8% Senior Notes due 2022 (1)	\$ —	\$ —	\$ 2,000,000	\$ 2,039,700
5% Senior Notes due 2023 (2)	1,443,179	1,441,635	1,500,000	1,541,670
2 3/8% Convertible Notes due 2024	1,000,000	906,970	1,000,000	966,990
5 7/8% Senior Notes due 2024	2,000,000	1,870,940	2,000,000	2,060,180
0% Convertible Notes due 2025	2,000,000	1,287,540	2,000,000	2,016,880
7 3/4% Senior Notes due 2026	2,000,000	1,620,280	2,000,000	2,122,700
3 3/8% Convertible Notes due 2026	3,000,000	1,894,230	3,000,000	2,844,030
5 1/4% Senior Secured Notes due 2026	2,750,000	2,336,813	2,750,000	2,792,900
11 3/4% Senior Secured Notes due 2027 (3)	2,000,000	2,071,240	—	—
7 3/8% Senior Notes due 2028	1,000,000	708,320	1,000,000	1,017,060
5 3/4% Senior Secured Notes due 2028	2,500,000	2,013,675	2,500,000	2,520,650
5 1/8% Senior Notes due 2029	1,500,000	976,755	1,500,000	1,365,645
Other notes payable	138,303	138,303	137,069	137,069
Subtotal	21,331,482	\$ 17,266,700	21,387,069	\$ 21,425,474
Unamortized deferred financing costs and other debt discounts, net	(105,697)		(69,711)	
Finance lease obligations (4)	123,353		99,658	
Total long-term debt and finance lease obligations (including current portion)	\$ 21,349,138		\$ 21,417,016	

- (1) As of July 15, 2022, we had repurchased or redeemed the principal balance of our 5 7/8% Senior Notes due 2022.
- (2) During the year ended December 31, 2022, we repurchased approximately \$57 million of our 5% Senior Notes due 2023 in open market trades. The remaining balance of approximately \$1.443 billion matures on March 15, 2023. Our 5% Senior Notes due 2023 have been reclassified to “Current portion of long-term debt and finance lease obligations” on our Consolidated Balance Sheets as of December 31, 2022.
- (3) On January 26, 2023, we issued an additional \$1.5 billion aggregate principal amount of our 11 3/4% Senior Secured Notes due November 15, 2027.
- (4) 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).

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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% Senior Notes due 2023

On December 27, 2012, we issued \$1.5 billion aggregate principal amount of our 5% Senior Notes due March 15, 2023. Interest accrues at an annual rate of 5% and is payable semi-annually in cash, in arrears on March 15 and September 15 of each year.

The 5% 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.

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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. 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.

Convertible Notes

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Subject to the terms of the related indenture, the Convertible Notes due 2024 may be converted at an initial conversion rate of 12.1630 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 \$82.22 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 24.4123 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 \$40.96 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 unregistered 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 15.3429 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 \$65.18 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

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 our Class A common stock underlying the Convertible Notes due 2026, which initially gives us the option to purchase approximately 46 million shares of our Class A common stock at a price of approximately \$65.18 per share. The total cost of the 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 our Class A common stock, which initially gives the option counterparties the option to purchase approximately 46 million shares of our Class A common stock at a price of approximately \$86.08 per share. We received \$376 million in cash proceeds from the sale of these warrants. For us, the economic effect of these transactions is to effectively raise the initial conversion price from approximately \$65.18 per share of our Class A common stock to approximately \$86.08 per share of our Class A common stock (thus effectively raising the conversion premium on the Convertible Notes due 2026 from approximately 32.5% to approximately 75%). 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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, 2022, the total Intercompany Loan amount outstanding plus interest paid in kind was \$7.160 billion. 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 Senior Secured Notes

Our DISH 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 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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.

Interest on Long-Term Debt

	Semi-Annual Payment Dates	Annual Debt Service Requirements
		(In thousands)
5% Senior Notes due 2023 (1)	March 15 and September 15	\$ 75,000
2 3/8% Convertible Notes due 2024	March 15 and September 15	\$ 23,750
5 7/8% Senior Notes due 2024	May 15 and November 15	\$ 117,500
7 3/4% Senior Notes due 2026	January 1 and July 1	\$ 155,000
3 3/8% Convertible Notes due 2026	February 15 and August 15	\$ 101,250
5 1/4% Senior Secured Notes due 2026	June 1 and December 1	\$ 144,375
11 3/4% Senior Secured Notes due 2027 (2)	May 15 and November 15	\$ 411,250
7 3/8% Senior Notes due 2028	January 1 and July 1	\$ 73,750
5 3/4% Senior Secured Notes due 2028	June 1 and December 1	\$ 143,750
5 1/8% Senior Notes due 2029	June 1 and December 1	\$ 76,875

- (1) Our 5% Senior Notes due 2023 mature on March 15, 2023 and have been reclassified to “Current portion of long-term debt and finance lease obligations” on our Consolidated Balance Sheets as of December 31, 2022.
- (2) Includes \$1.5 billion aggregate principal amount of our 11 3/4% Senior Secured Notes due November 15, 2027 issued January 26, 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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,	
	2022	2021
	(In thousands)	
Satellites and other finance lease obligations	\$ 123,353	\$ 99,658
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%	138,303	137,069
Total	261,656	236,727
Less: current portion	(104,011)	(61,810)
Other long-term debt and finance lease obligations, net of current portion	\$ 157,645	\$ 174,917

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.

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, 2022 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

As of December 31, 2022, we had \$40 million net operating loss carryforwards (“NOLs”) for federal income tax purposes and \$181 million of NOL carryforwards for state income tax purposes, which are partially offset by a valuation allowance. In addition, there are \$59 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 2022.

The components of the (benefit from) provision for income taxes were as follows:

	For the Years Ended December 31,		
	2022	2021	2020
	(In thousands)		
Current (benefit) provision:			
Federal	\$ (23,571)	\$ 126,435	\$ (230,935)
State	59,690	31,944	22,566
Foreign	(7,118)	2,387	7,471
Total current (benefit) provision	29,001	160,766	(200,898)
Deferred (benefit) provision:			
Federal	615,323	509,405	610,528
State	85,045	86,822	243,216
Increase (decrease) in valuation allowance	2,367	5,817	45,429
Total deferred (benefit) provision	702,735	602,044	899,173
Total (benefit) provision	\$ 731,736	\$ 762,810	\$ 698,275

Our \$3.105 billion of “Income (loss) before income taxes” on our Consolidated Statements of Operations and Comprehensive Income (Loss) included losses of \$2 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,		
	2022	2021	2020
	% of pre-tax income/(loss)		
Statutory rate	21.0	21.0	21.0
State income taxes, net of federal benefit	3.6	3.1	4.6
State apportionment changes	—	—	5.4
Cares Act NOL Carryback	—	—	(2.3)
Other, net	(1.0)	(0.4)	(1.6)
Total (benefit) provision for income taxes	23.6	23.7	27.1

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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,	
	2022	2021
	(In thousands)	
Deferred tax assets:		
NOL, interest, credit and other carryforwards	\$ 445,389	\$ 144,742
Accrued and prepaid expenses	672,854	282,711
Stock-based compensation	23,738	15,847
Unrealized (gains) losses on available for sale and other investments	—	12,825
Discount on convertible notes and convertible note hedge transaction, net	64,643	79,644
Deferred revenue	6,903	7,025
Total deferred tax assets	1,213,527	542,794
Valuation allowance	(81,972)	(79,605)
Deferred tax asset after valuation allowance	1,131,555	463,189
Deferred tax liabilities:		
Depreciation	(1,374,276)	(858,707)
Unrealized (gains) losses on available for sale and other investments (1)	(244,397)	—
FCC authorizations and other intangible amortization	(3,400,772)	(2,933,660)
Bases differences in partnerships and cost method investments (2)	(1,042,245)	(897,088)
Total deferred tax liabilities	(6,061,690)	(4,689,455)
Net deferred tax asset (liability)	\$ (4,930,135)	\$ (4,226,266)

- (1) Included in this line item are deferred taxes related to, among other things, the change in value of a derivative instrument related to the increase in our probability of exercising the purchase option. 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.

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 and a small number of foreign jurisdictions where we have immaterial operations. We are subject to United States federal, state and local income tax examinations by tax authorities for the years beginning in 2008 due to the carryover of previously incurred NOLs. We are currently under a federal income tax examination for years 2008 through 2011, 2013 through 2016, and 2018 through 2019.

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,		
	2022	2021	2020
	(In thousands)		
Balance as of beginning of period	\$ 388,837	\$ 378,467	\$ 674,207
Additions based on tax positions related to the current year	35,180	303	233
Additions based on tax positions related to prior years	14,723	12,095	1,999
Reductions based on tax positions related to prior years	(7,100)	(1,400)	(296,265)
Reductions based on tax positions related to settlements with taxing authorities	—	—	(831)
Reductions based on tax positions related to the lapse of the statute of limitations	—	(628)	(876)
Balance as of end of period	\$ 431,640	\$ 388,837	\$ 378,467

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

We have \$354 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. During the year ended December 31, 2019, we recorded \$274 million of additional uncertain tax benefits related to a tax position for certain provisions of the Tax Reform Act. As of December 31, 2020, these amounts were reversed as new Federal Tax Regulations released in 2020 resolved these uncertainties. The position relates to a timing difference and resolution with respect to the position did not impact our effective tax rate. 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, 2022, 2021 and 2020, we recorded \$22 million, \$16 million and \$13 million in net interest and penalty expense to earnings, respectively. Accrued interest and penalties were \$126 million and \$104 million at December 31, 2022 and 2021, respectively. The above table excludes these amounts.

12. Stockholders’ Equity (Deficit)

Capital Stock and Additional Paid-In Capital

Our certificate of incorporation authorizes the following capital stock: (i) 1,600,000,000 shares of Class A common stock, par value \$0.01 per share; (ii) 800,000,000 shares of Class B common stock, par value \$0.01 per share; (iii) 800,000,000 shares of Class C common stock, par value \$0.01 per share; and (iv) 20,000,000 shares of preferred stock, par value \$0.01 per share. As of December 31, 2022 and 2021, there were no outstanding shares of Class C common stock or preferred stock.

The 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 “DISH.” Upon a change in control of DISH Network, each holder of outstanding shares of Class C common stock is entitled to 10 votes for each share of Class C common stock held. 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.

Common Stock Repurchase Program

Our Board of Directors previously authorized stock repurchases of up to \$1.0 billion of our outstanding Class A common stock. On October 21, 2022, our Board of Directors extended this authorization such that we are currently authorized to repurchase up to \$1.0 billion of our outstanding Class A common stock through and including December 31, 2023. As of December 31, 2023, we may repurchase up to \$1.0 billion under this program. During the years ended December 31, 2022, 2021 and 2020, there were no repurchases of our Class A common stock.

13. Employee Benefit Plans

Employee Stock Purchase Plan

Our employees may participate in the DISH Network employee stock purchase plan (the “ESPP”), in which we are authorized to issue up to 6.8 million shares of Class A common stock. At December 31, 2022, we had 0.7 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. During the years ended December 31, 2022, 2021 and 2020, employee purchases of Class A common stock through the ESPP totaled approximately 1.2 million, 0.6 million and 0.8 million shares, respectively.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

401(k) Employee Savings Plan

We sponsor a 401(k) Employee Savings Plan (the “401(k) Plan”) for eligible employees. Voluntary employee contributions to the 401(k) Plan may be matched 50% by us, subject to a maximum annual contribution of \$2,500 per employee. Forfeitures of unvested participant balances which are retained by the 401(k) Plan may be used to fund matching and discretionary contributions. Our Board of Directors may also authorize an annual discretionary contribution to the 401(k) plan, 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,		
	2022	2021	2020
		(In thousands)	
Matching contributions, net of forfeitures	\$ 12,800	\$ 8,912	\$ 11,549
Discretionary stock contributions, net of forfeitures	\$ 14,564	\$ 26,383	\$ 29,784

14. Stock-Based Compensation**Stock Incentive Plans**

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, 2022, we had outstanding under these plans stock options to acquire 29.9 million shares of our Class A common stock and 1.4 million restricted stock units and awards. Stock options granted on or prior to December 31, 2022 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, 2022, we had 52.6 million shares of our Class A common stock available for future grant under our 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. The total incremental non-cash stock-based compensation expense resulting from the Exchange Offer is \$28 million, which will be recognized over the remaining vesting period of the applicable options. During the year ended December 31, 2022, we recognized \$9 million of incremental non-cash, stock-based compensation expense on our Consolidated Statements of Operations and Comprehensive Income (Loss) as a result of the Exchange Offer.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Exercise prices for stock options outstanding and exercisable as of December 31, 2022 were as follows:

		As of December 31, 2022					
		Options Outstanding			Options Exercisable		
		Number Outstanding	Weighted- Average Remaining Contractual Life	Weighted- Average Exercise Price	Number Exercisable	Weighted- Average Remaining Contractual Life	Weighted- Average Exercise Price
\$	10.01 - \$ 20.00	14,058,700	9.31	\$ 19.88	3,157,297	9.34	\$ 19.94
\$	20.01 - \$ 30.00	12,734,761	8.07	\$ 27.71	2,622,669	8.01	\$ 27.68
\$	30.01 - \$ 40.00	1,387,980	2.40	\$ 35.74	416,520	4.08	\$ 34.76
\$	40.01 - \$ 50.00	88,939	4.01	\$ 46.60	22,600	2.17	\$ 46.93
\$	50.01 - \$ 60.00	1,223,126	3.72	\$ 57.82	—	—	\$ —
\$	60.01 - \$ 70.00	414,500	3.33	\$ 63.81	4,000	—	\$ 63.90
\$	10.01 - \$ 70.00	29,908,006	8.14	\$ 26.19	6,223,086	8.40	\$ 24.32

Stock Award Activity

Our stock option activity was as follows:

	For the Years Ended December 31,					
	2022		2021		2020	
	Options	Weighted- Average Exercise Price	Options	Weighted- Average Exercise Price	Options	Weighted- Average Exercise Price
Total options outstanding, beginning of period (1)	26,702,903	\$ 34.95	27,248,662	\$ 34.85	13,715,612	\$ 41.71
Granted (2)(3)	18,031,503	\$ 22.42	2,005,000	\$ 39.56	15,410,500	\$ 28.71
Exercised	(27,635)	\$ 29.61	(1,316,485)	\$ 31.49	(714,595)	\$ 17.44
Forfeited and cancelled (3)	(14,798,765)	\$ 37.40	(1,234,274)	\$ 43.83	(1,162,855)	\$ 45.17
Total options outstanding, end of period	29,908,006	\$ 26.19	26,702,903	\$ 34.95	27,248,662	\$ 34.85
Performance/market based options outstanding, end of period (4)	15,060,879	\$ 30.37	13,953,818	\$ 32.89	17,403,339	\$ 32.59
Exercisable at end of period	6,223,086	\$ 24.32	7,741,300	\$ 37.04	5,193,238	\$ 40.21

- (1) The beginning of period weighted-average exercise price for the year ended December 31, 2022 of \$34.95 does not reflect the Exchange Offer, which occurred subsequent to December 31, 2021.
- (2) Includes the Ergen 2020 Performance Award of 12,500,000 options granted on November 6, 2020.
- (3) Includes approximately 13 million stock options granted and cancelled in connection with the Exchange Offer.
- (4) These stock options are included in the caption "Total options outstanding, end of period." See discussion of the 2013 LTIP, 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,		
	2022	2021	2020
	(In thousands)		
Tax benefit from stock awards exercised	\$ 573	\$ 4,153	\$ 7,576

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Based on the closing market price of our Class A common stock on December 31, 2022, the aggregate intrinsic value of our stock options was as follows:

	As of December 31, 2022	
	Options Outstanding	Options Exercisable
	(In thousands)	
Aggregate intrinsic value	\$ 36	\$ 2

Our restricted stock unit and award activity was as follows:

	For the Years Ended December 31,					
	2022		2021		2020	
	Restricted Stock Units/Awards	Weighted- Average Grant Date Fair Value	Restricted Stock Units/Awards	Weighted- Average Grant Date Fair Value	Restricted Stock Units/Awards	Weighted- Average Grant Date Fair Value
Total restricted stock units/awards outstanding, beginning of period	1,487,506	\$ 35.68	1,863,110	\$ 35.04	1,504,370	\$ 50.81
Granted	262,812	\$ 31.01	79,288	\$ 42.41	1,696,000	\$ 33.07
Vested (1)	(88,386)	\$ 31.78	(28,955)	\$ 43.26	(916,315)	\$ 53.82
Forfeited and cancelled	(228,938)	\$ 33.28	(425,937)	\$ 33.62	(420,945)	\$ 42.56
Total restricted stock units/awards outstanding, end of period	1,432,994	\$ 35.45	1,487,506	\$ 35.68	1,863,110	\$ 35.04
Restricted Performance Units/Awards outstanding, end of period (2)	1,105,650	\$ 35.75	1,330,925	\$ 35.31	1,755,125	\$ 34.89

- (1) This change in 2020 resulted from certain Other Employee Performance Awards that vested during the third quarter of 2020.
- (2) These stock units/awards are included in the caption "Total restricted stock units/awards outstanding, end of period." See discussion of the 2013 LTIP and Other Employee Performance Awards below.

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 783,500 stock options and 391,750 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, 2022, would result in the cancellation of 1,689,380 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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, 2022, 2021 and 2020, we determined that 89%, 90% and 95%, 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, 2022, 2021 and 2020, as indicated in the table below titled "Non-Cash, Stock-Based Compensation Expense Recognized." As of December 31, 2022 and 2021, approximately 75% and 69%, respectively, of the 2019 LTIP awards had vested.

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, 2022, 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, 2022 as indicated in the table below titled "Non-Cash, Stock-Based Compensation Expense Recognized." As of December 31, 2022, approximately 33% 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 12,500,000 shares of DISH Network's Class A common stock. The award is subject to the achievement of specified DISH Network 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, 2022, 2021 and 2020, as indicated in the table below titled "Non-Cash, Stock-Based Compensation Expense Recognized." As of December 31, 2022 and 2021, approximately 20% of the Ergen 2020 Performance Award awards had vested.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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, 2022, 2021 and 2020, 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:

Non-Cash, Stock-Based Compensation Expense Recognized (1)	For the Years Ended December 31,		
	2022	2021	2020
	(In thousands)		
2022 Incentive Plan	\$ 19,088	\$ —	\$ —
2019 LTIP	(97)	489	13,088
2013 LTIP	—	(13,610)	(819)
Ergen 2020 Performance Award	12,308	34,513	5,029
Other employee performance awards	4,502	9,033	29,181
Total non-cash, stock-based compensation expense recognized for performance based awards	\$ 35,801	\$ 30,425	\$ 46,479

(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 2023	\$ 8,155	\$ 1,930	\$ 12,308	\$ 2,460
Estimated contingent expense subsequent to 2023	6,008	6,199	27,730	—
Total estimated remaining expense over the term of the plan	\$ 14,163	\$ 8,129	\$ 40,038	\$ 2,460

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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, 2022, that assessment could change in the future.

Of the 29.9 million stock options and 1.4 million restricted stock units and awards outstanding under our stock incentive plans as of December 31, 2022, the following awards were outstanding pursuant to our performance-based stock incentive plans:

	As of December 31, 2022	
	Number of Awards	Weighted-Average Grant Price
Performance Based Stock Options		
2022 Incentive Plan	1,603,391	\$ 19.71
2019 LTIP	984,608	\$ 20.84
2017 LTIP	1,689,380	\$ 56.95
2013 LTIP (1)	783,500	\$ 40.77
Ergen 2020 Performance Award	10,000,000	\$ 27.71
Total	15,060,879	\$ 30.37
Restricted Performance Units/Awards		
2013 LTIP (1)	391,750	
Other employee performance awards	713,900	
Total	1,105,650	

(1) This plan expired on January 1, 2023.

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, 2022, 2021 and 2020 and was allocated to the same expense categories as the base compensation for such employees:

	For the Years Ended December 31,		
	2022	2021	2020
		(In thousands)	
Cost of services	\$ 6,511	\$ 4,365	\$ 7,419
Selling, general and administrative	64,939	47,315	57,535
Total non-cash, stock-based compensation	\$ 71,450	\$ 51,680	\$ 64,954

As of December 31, 2022, our total unrecognized compensation cost related to our non-performance based unvested stock awards was \$77 million and will be recognized over a weighted-average period of approximately 4.3 years. Share-based compensation expense is recognized based on stock awards ultimately expected to vest.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Valuation

The fair value of each stock option granted (excluding the Ergen 2020 Performance Award and the Exchange Offer) for the years ended December 31, 2022, 2021 and 2020 was estimated at the date of the grant using a Black-Scholes option valuation model with the following assumptions:

Stock Options	For the Years Ended December 31,					
	2022		2021		2020	
Risk-free interest rate	0.91 %	- 4.06 %	0.44 %	- 1.02 %	0.17 %	- 1.72 %
Volatility factor	44.00 %	- 53.60 %	40.62 %	- 43.48 %	28.91 %	- 48.08 %
Expected term of options in years	2.8	- 5.6	5.5	- 5.6	3.3	- 5.5
Fair value of options granted	\$ 6.53	- \$ 14.17	\$ 12.46	- \$ 18.23	\$ 5.50	- \$ 12.10

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, 2022, future maturities of our long-term debt, finance lease and contractual obligations are summarized as follows:

	Payments due by period						
	Total	2023	2024	2025	2026	2027	Thereafter
				(In thousands)			
Long-term debt obligations	\$ 21,331,482	\$ 1,499,123	\$ 3,039,858	\$ 2,022,265	\$ 7,753,954	\$ 2,004,162	\$ 5,012,120
Interest expense on long-term debt	4,906,491	1,115,272	1,063,347	932,131	931,026	530,192	334,523
Finance lease obligations (1)	123,353	48,066	44,770	18,094	12,423	—	—
Interest expense on finance lease obligations (1)	17,078	9,965	4,680	1,951	482	—	—
Other long-term obligations (2)	15,115,199	4,044,094	2,396,469	1,919,294	1,756,374	1,379,489	3,619,479
Operating lease obligations (1)	4,512,258	268,453	298,054	328,988	357,711	360,164	2,898,888
Purchase obligations	1,746,847	1,724,431	11,736	6,369	4,311	—	—
Total	\$ 47,752,708	\$ 8,709,404	\$ 6,858,914	\$ 5,229,092	\$ 10,816,281	\$ 4,274,007	\$ 11,865,010

- (1) See Note 9 for further information on leases and the adoption of ASC 842.
- (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, 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 \$432 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, 2022. We do not expect any portion of this amount to be paid or settled within the next 12 months.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 and 2022, of which approximately \$2.438 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 the Spectrum Purchase Agreement (as defined in our Annual Report on Form 10-K for the year ended December 31, 2021) for approximately \$3.59 billion. If we elect to not exercise the option to purchase the 800 MHz licenses pursuant to the Spectrum Purchase Agreement or it expires, we are potentially subject to pay T-Mobile a fee of approximately \$72 million per the Spectrum Purchase Agreement under certain circumstances. The \$3.59 billion and the \$72 million are not included in “Other long-term obligations” above.

Pursuant to the Stipulation and Order and the Final Judgment (as defined in our Annual Report on Form 10-K for the year ended December 31, 2021) if we elected not to purchase the 800 MHz licenses pursuant to the Spectrum Purchase Agreement, we were required to pay \$360 million to the United States. We are no longer required to make this payment as a result of achieving the milestone to offer 5G broadband service to at least 20% of the United States population on June 14, 2022. See our Annual Report on Form 10-K for the year ended December 31, 2021 for further information on the Spectrum Purchase Agreement.

Wireless – 5G Network Deployment

We have invested a total of over \$30 billion in Wireless spectrum licenses, which includes over \$10 billion in noncontrolling investments in certain entities. The \$30 billion of investments related to Wireless spectrum licenses does not include \$7 billion of capitalized interest related to the carrying value of such licenses. See Note 2 for further information on capitalized interest.

Wireless Spectrum Acquisitions

3.45–3.55 GHz. Auction 110 began on October 5, 2021 and ended January 4, 2022. On January 14, 2022, the FCC announced that Weminuche was the winning bidder of 1,232 Flexible-Use Service Licenses in the 3.45–3.55 GHz band, with Weminuche’s aggregate winning bids totaling approximately \$7.328 billion. During the third quarter of 2021, we paid \$123 million to the FCC as a deposit for Auction 110. In January and February 2022, we paid the remaining balance of our winning bids of approximately \$7.205 billion. We paid this obligation from cash, restricted cash and marketable investment securities balances at that time. On May 4, 2022, the FCC issued an order granting Weminuche’s application to acquire the 3.45–3.55 GHz licenses (the “3.45–3.55 GHz Licenses”). The payment made in 2021 was included in “Other current assets” as of December 31, 2021. As of December 31, 2022, our total payment of \$7.328 billion has been recorded in “FCC authorizations” on our Consolidated Balance Sheets.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Wireless Spectrum Licenses

These Wireless spectrum licenses are subject to certain interim and final build-out requirements, as well as certain renewal requirements that are summarized in the table below:

	Carrying Amount (In thousands)	Build-Out Deadlines		Expiration Date
		Interim	Final	
Owned:				
DBS Licenses (1)	\$ 677,409			
700 MHz Licenses (2)	711,871		June 14, 2023 (3)	June 2023
AWS-4 Licenses (2)	1,940,000		June 14, 2023 (3)	June 2023
H Block Licenses (2)	1,671,506		June 14, 2023 (4)	June 2023
600 MHz Licenses	6,212,579		June 14, 2025 (5)	June 2029
MVDDS Licenses (1)	24,000			August 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	2,688	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
Subtotal	19,698,169			
Noncontrolling Investments:				
Northstar	5,618,930		October 2025 (7)	October 2025 (7)
SNR	4,271,459		October 2025 (7)	October 2025 (7)
Total AWS-3 Licenses	9,890,389			
Capitalized Interest (8)	7,344,515			
Total as of December 31, 2022	\$ 36,933,073			

- (1) The build-out deadlines for these licenses have been met.
- (2) The interim build-out deadlines for these licenses have been met.
- (3) For these licenses, we must offer 5G broadband service to 70% of the United States population by this date; provided, however, if by June 14, 2023, we are offering 5G broadband service with respect to these licenses to at least 50% of the population of the United States but less than 70% of the population of the United States, the final deadline shall be further extended automatically to June 14, 2025, for us to construct and offer 5G broadband service to at least 70% of the population in each Economic Area (which is a service area established by the FCC) with respect to these licenses.
- (4) For these licenses, we must offer 5G broadband service to at least 70% of the United States population by this date; provided, however, that if by June 14, 2023, we are offering 5G broadband service with respect to these licenses to at least 50% of the population of the United States but less than 70% of the population of the United States, the final deadline shall be further extended automatically to June 14, 2025, for us to construct and offer 5G broadband service to at least 75% of the population in each Economic Area (which is a service area established by the FCC) with respect to these licenses.
- (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, Northstar Wireless and SNR Wireless 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 in which Northstar Wireless and SNR Wireless did not meet the requirement.
- (8) See Note 2 for further information.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 a facilities-based 5G broadband 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. We are currently focused on our progression towards offering 5G broadband service to at least 70% of the U.S. population with a minimum of 15,000 5G sites. As of December 31, 2022, we had started construction on over 15,000 5G sites, which, if completed, are capable of providing broadband coverage to over 60% of the U.S. population. Construction starts are continuing at a rate of approximately 1,000 5G sites per month. We currently expect capital expenditures, excluding capitalized interest, for our 5G Network Deployment to be approximately \$10 billion, including amounts incurred in 2021 and 2022. See Note 2 for further information.

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. In addition, as we complete our initial 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. 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 raise significant additional capital in the future to fund the efforts described above, which may not be available on favorable terms. There can be no assurance that we will be able to develop and implement a business model that will realize a return on these Wireless spectrum licenses or that we will be able to profitably deploy the assets represented by these Wireless spectrum licenses, which may affect the carrying amount of these assets and our future financial condition or results of operations.

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

Noncontrolling Investments

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 with the United States Supreme Court requesting that it hear a further appeal.

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.

DISH NETWORK CORPORATION
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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.

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.

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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 “FCC authorizations” 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 with the United States Supreme Court requesting that it hear a further appeal.

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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. The value of the Northstar Put Right has accrued to approximately \$96 million as of December 31, 2022. The consummation of the sale is subject to approval by the FCC. We expect to fund this obligation from cash and marketable investment securities balances at that time.

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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. The value of the SNR Put Right has accrued to approximately \$368 million as of December 31, 2022. The consummation of the sale is subject to approval by the FCC. We expect to fund this obligation from cash and marketable investment securities balances at that time.

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.

As of December 31, 2022 and December 31, 2021, the aggregate value of Northstar Manager’s ownership interest in Northstar Spectrum and SNR Management’s ownership interest in SNR HoldCo was \$464 million and \$395 million, respectively, recorded as “Redeemable noncontrolling interests” on our Consolidated Balance Sheets.

The Northstar Entities and/or the SNR Entities may need to raise significant additional capital in the future, which may be obtained from third party sources or from us, so that the Northstar Entities and the SNR Entities may commercialize, build-out and integrate these AWS-3 Licenses, comply with regulations applicable to such AWS-3 Licenses, and make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses retained by the FCC. Depending upon the nature and scope of such commercialization, build-out and integration efforts, regulatory compliance, and potential Northstar Re-Auction Payment and SNR Re-Auction Payment, any loans, equity contributions or partnerships could vary significantly. There can be no assurance that we will be able to obtain a profitable return on our noncontrolling investments in the Northstar Entities and the SNR Entities.

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 related to the operation of our Pay-TV services. In addition, our 2023 purchase obligations also include wireless devices related to our Retail Wireless business as well as transition services pursuant to the TSA with T-Mobile. 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Contingencies

Separation Agreement

On January 1, 2008, we completed the distribution of our technology and set-top box business and certain infrastructure assets (the “Spin-off”) into a separate publicly-traded company, EchoStar. In connection with the Spin-off, we entered into a separation agreement with EchoStar that provides, among other things, for the division of certain liabilities, including liabilities resulting from litigation. Under the terms of the separation agreement, EchoStar has assumed certain liabilities that relate to its business, including certain designated liabilities for acts or omissions that occurred prior to the Spin-off. Certain specific provisions govern intellectual property related claims under which, generally, EchoStar will only be liable for its acts or omissions following the Spin-off and we will indemnify EchoStar for any liabilities or damages resulting from intellectual property claims relating to the period prior to the Spin-off, as well as our acts or omissions following the Spin-off. On February 28, 2017, we and EchoStar and certain of our respective subsidiaries completed the transactions contemplated by the Share Exchange Agreement (the “Share Exchange Agreement”) that was previously entered into on January 31, 2017 (the “Share Exchange”), pursuant to which certain assets that were transferred to EchoStar in the Spin-off were transferred back to us. On September 10, 2019, we and EchoStar and certain of our respective subsidiaries completed the transactions contemplated by the Master Transaction Agreement (the “Master Transaction Agreement”) that was previously entered into on May 19, 2019, pursuant to which certain assets that were transferred to EchoStar in the Spin-off were transferred back to us. The Share Exchange Agreement and the Master Transaction Agreement contain additional indemnification provisions between us and EchoStar for certain liabilities and legal proceedings.

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, our wholly-owned subsidiary DISH Network L.L.C., EchoStar, and its 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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.

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. In December 2021, DISH Network L.L.C. petitioned for review of the denial as to 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 motion for summary judgment. Thereafter, ClearPlay narrowed its case to four asserted claims: one under the 799 patent and three under the 970 patent. Trial on those claims is scheduled for February 27, 2023. ClearPlay's damages expert last contended that ClearPlay is entitled to \$885 million in damages, but the Court's summary judgment ruling eliminated some of the accused products on which that number was based.

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.

Contemporary Display LLC

On June 4, 2018, Contemporary Display LLC ("Contemporary") filed a complaint against us and DISH Network L.L.C. in the United States District Court for the Western District of Texas. The complaint alleges infringement of United States Patent No. 6,028,643 (the "643 patent"), entitled "Multiple-Screen Video Adapter with Television Tuner"; United States Patent No. 6,429,903 (the "903 patent"), entitled "Video Adapter for Supporting at Least One Television Monitor"; United States Patent No. 6,492,997 (the "997 patent"), entitled "Method and System for Providing Selectable Programming in a Multi-Screen Mode"; United States Patent No. 7,500,202 (the "202 patent"), entitled "Remote Control for Navigating Through Content in an Organized and Categorized Fashion"; and United States Patent No. 7,809,842 (the "842 patent"), entitled "Transferring Sessions Between Devices." The 643 patent and the 903 patent are directed to video adapters for use with multiple displays. The 997 patent is directed to a system for presenting multiple video programs on a display device simultaneously. The 202 patent is directed to a remote control for interacting with a set-top box having programmable features and "operational controls" on at least three sides of the remote control. The 842 patent is directed to a system for managing online communication sessions between multiple devices. Contemporary is an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

In a First Amended Complaint filed on August 6, 2018, Contemporary added our wholly-owned subsidiary DISH Network L.L.C. as a defendant. In a Second Amended Complaint filed on October 9, 2018, Contemporary named only our wholly-owned subsidiary DISH Network L.L.C. as a defendant and dropped certain indirect infringement allegations. On June 10, 2019, DISH Network L.L.C. filed petitions with the United States Patent and Trademark Office challenging the validity of the asserted claims of the 842 patent, the 903 patent, the 643 patent and the 997 patent. On December 13, 2019 and January 7, 2020, the United States Patent and Trademark Office agreed to institute proceedings on each of our petitions. Following Contemporary's decision not to file Patent Owner Responses to DISH Network L.L.C.'s petitions on the 842 patent and the 903 patent, on April 24, 2020, the United States Patent and Trademark Office entered judgments granting those petitions and canceling the challenged claims of those patents. On November 25, 2020 and December 18, 2020, respectively, the United States Patent and Trademark Office issued final written decisions invalidating all challenged claims of, respectively, the 643 patent and the 997 patent. On January 31, 2020, pursuant to the parties' joint motion, the Court dismissed all claims arising from the 202 patent.

On February 12, 2021, Contemporary Display noticed an appeal to the United States Court of Appeals for the Federal Circuit challenging the final written decision as to the 997 patent, and the Court of Appeals heard oral argument on April 7, 2022 and summarily affirmed our victory on April 11, 2022. On April 21, 2022, Contemporary Display stipulated to the dismissal with prejudice of its case. This matter is now concluded.

Customedia Technologies, L.L.C.

On February 10, 2016, Customedia Technologies, L.L.C. ("Customedia") filed a complaint against us and our wholly-owned subsidiary DISH Network L.L.C. in the United States District Court for the Eastern District of Texas. The complaint alleges infringement of four patents: United States Patent No. 8,719,090 (the "090 patent"); United States Patent No. 9,053,494 (the "494 patent"); United States Patent No. 7,840,437 (the "437 patent"); and United States Patent No. 8,955,029 (the "029 patent"). Each patent is entitled "System for Data Management And On-Demand Rental And Purchase Of Digital Data Products." Customedia alleges infringement in connection with our addressable advertising services, our DISH Anywhere feature, and our Pay-Per-View and video-on-demand offerings. Customedia is an entity that seeks to license a patent portfolio without itself practicing any of the claims recited therein.

In December 2016 and January 2017, DISH Network L.L.C. filed petitions with the United States Patent and Trademark Office challenging the validity of the asserted claims of each of the asserted patents. On June 12, 2017, the United States Patent and Trademark Office agreed to institute proceedings on our petitions challenging the 090 patent and the 437 patent; on July 18, 2017, it agreed to institute proceedings on our petitions challenging the 029 patent; and on July 28, 2017, it agreed to institute proceedings on our petitions challenging the 494 patent. These instituted proceedings cover all asserted claims of each of the asserted patents.

Pursuant to an agreement between the parties, on December 20, 2017, DISH Network L.L.C. dismissed its petitions challenging the 029 patent in the United States Patent and Trademark Office, and on January 9, 2018, the parties dismissed their claims, counterclaims and defenses as to that patent in the litigation. On March 5, 2018, the United States Patent and Trademark Office conducted a trial on the remaining petitions. On June 11, 2018, the United States Patent and Trademark Office issued final written decisions on DISH Network L.L.C.'s petitions challenging the 090 patent and it invalidated all of the asserted claims. On July 25, 2018, the United States Patent and Trademark Office issued final written decisions on DISH Network L.L.C.'s petitions challenging the 437 patent and the 494 patent and it invalidated all of the asserted claims. Customedia appealed its losses. The Court of Appeals for the Federal Circuit heard oral argument on November 6, 2019 on the appeal involving the 437 patent, and summarily affirmed the patent's invalidity on November 8, 2019.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

On January 7, 2020, Customedia petitioned the Court of Appeals for rehearing or rehearing en banc, raising issues about the constitutionality of the appointment of the administrative patent judges that heard the petition before the United States Patent and Trademark Office, but the Court of Appeals denied rehearing on March 5, 2020. On July 31, 2020, Customedia filed a petition with the United States Supreme Court asking it to hear a further appeal, but its petition was denied on October 13, 2020. On November 6, 2020, it filed a petition for rehearing on the United States Supreme Court's decision not to hear a further appeal, but on November 17, 2020, the Supreme Court rejected that petition.

The Court of Appeals heard oral argument on the appeal involving the 090 patent and the 494 patent on December 3, 2019, and affirmed those patents' invalidity on March 6, 2020. On May 5, 2020, Customedia filed petitions in the Federal Circuit for rehearing and rehearing en banc, but those petitions were denied on June 9, 2020. On November 6, 2020, Customedia served a petition to the United States Supreme Court asking it to hear a further appeal.

On June 16, 2021, the United States Patent and Trademark Office issued a certificate cancelling the challenged claims of the 437 patent and, on July 9, 2021, it issued certificates cancelling the challenged claims of the 090 and 494 patents. Customedia thereafter petitioned the United States Patent and Trademark Office to withdraw its cancellation certificates. On November 22, 2021, the United States Patent and Trademark Office denied Customedia's petition as to the 437 patent, and on June 14, 2022, it denied Customedia's petitions as to the 090 patent and the 494 patent. Accordingly, on August 10, 2022, the District Court granted DISH Network L.L.C.'s Motion to Dismiss with prejudice, and entered final judgment in its favor. This matter is now concluded.

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. The Court has set the case for trial on April 1, 2024.

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 us and our wholly-owned subsidiaries 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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 (second action)

On February 10, 2023, Entropic filed a second lawsuit against us and our wholly-owned subsidiaries 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.

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.

Gravel Rating Systems LLC

On April 23, 2021, Gravel Rating Systems LLC (“Gravel Rating Systems”) filed a complaint in the United States District Court for the Eastern District of Texas against our wholly-owned subsidiary DISH Wireless L.L.C. The complaint alleges infringement of U.S. Patent No. 7,590,636 (the “636 patent”), entitled “Knowledge Filter.” The complaint accuses the Boost Mobile website of infringing the 636 patent in connection with the way in which it collects and stores user comments and ratings. Gravel Rating Systems has brought similar complaints against, among others, T-Mobile, Costco, Lowe’s, Kohl’s and Target. On October 24, 2022, pursuant to a joint motion of the parties, the Court dismissed the lawsuit against DISH Wireless L.L.C. This matter is now concluded.

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 us, our Board of Directors, and our 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.

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.

DISH NETWORK 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; our wholly-owned subsidiaries DISH Network L.L.C., DISH Technologies L.L.C. (then known as EchoStar Technologies L.L.C.), Sling TV L.L.C. and Sling Media L.L.C.; EchoStar, and EchoStar’s wholly-owned subsidiary 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 EchoStar and 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., Sling Media L.L.C. and Arris Group, Inc. 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 Hughes’ products and services infringe 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 us, 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 us, 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 we nor any of our 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 a settlement with the plaintiff, Arris Group, Inc. was dismissed from the action on March 10, 2021.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 our 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 our 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 has filed a notice of appeal from that ruling to the United States Court of Appeals for the Federal Circuit, and that appeal was fully briefed as of October 21, 2022. 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 filed its opening brief on January 20, 2023. 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. On February 15, 2022, Realtime Adaptive Streaming filed a notice of appeal from that final office action to the Patent Trial and Appeal Board, and that appeal is fully briefed.

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. Realtime Adaptive Streaming is an entity that seeks to license an acquired patent portfolio without itself practicing any of the claims recited therein.

SafeCast Limited

On June 27, 2022, SafeCast Limited filed a complaint against us in the United States District Court for the Western District of Texas. The complaint alleges that we infringe U.S. Patent No. 9,392,302, entitled "System for providing improved facilities in time-shifted broadcasts." 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 transferred to the United States District Court for the District of Colorado.

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Scenic Licensing LLC

On October 27, 2021, Scenic Licensing LLC filed a complaint against our wholly-owned subsidiary Sling Media L.L.C. in the United States District Court for the District of Delaware. The complaint alleges that the Sling Studio product infringes U.S. Patent No. 8,677,420 (the “420 patent”), entitled “Personal monitoring and information apparatus.” On February 28, 2022, Scenic Licensing LLC filed an amended complaint making the same primary allegation. Rather than responding to Sling Media L.L.C.’s motion to dismiss the amended complaint, which asserted that the 420 patent claims non-patentable subject matter, on April 21, 2022, Scenic Licensing LLC dismissed the case. This matter is now concluded.

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. Appellate briefing on the 796 appeal was completed on January 19, 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.

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Telemarketing Shareholder Derivative Litigation

On October 19, 2017, Plumbers Local Union No. 519 Pension Trust Fund (“Plumbers Local 519”), a purported shareholder of the Company, filed a putative shareholder derivative action in the District Court for Clark County, Nevada alleging, among other things, breach of fiduciary duty claims against the following current and former members of the Company’s Board of Directors: Charles W. Ergen; James DeFranco; Cantey M. Ergen; Steven R. Goodbarn; David K. Moskowitz; Tom A. Ortolf; Carl E. Vogel; George R. Brokaw; and Gary S. Howard (collectively, the “Director Defendants”).

In its complaint, Plumbers Local 519 contends that, by virtue of their alleged failure to appropriately ensure the Company’s compliance with telemarketing laws, the Director Defendants exposed the Company to liability for telemarketing violations, including those in the Krakauer Action. It also contends that the Director Defendants caused the Company to pay improper compensation and benefits to themselves and others who allegedly breached their fiduciary duties to the Company. Plumbers Local 519 alleges causes of action for breach of fiduciary duties of loyalty and good faith, gross mismanagement, abuse of control, corporate waste and unjust enrichment. Plumbers Local 519 is seeking an unspecified amount of damages.

On November 13, 2017, City of Sterling Heights Police and Fire Retirement System (“Sterling Heights”), a purported shareholder of the Company, filed a putative shareholder derivative action in the District Court for Clark County, Nevada. Sterling Heights makes substantially the same allegations as Plumbers Union 519, and alleges causes of action against the Director Defendants for breach of fiduciary duty, waste of corporate assets and unjust enrichment. Sterling Heights is seeking an unspecified amount of damages. Pursuant to a stipulation of the parties, on January 4, 2018, the District Court agreed to consolidate the Sterling Heights action with the Plumbers Local 519 action, and on January 12, 2018, the derivative plaintiffs filed an amended consolidated complaint that largely duplicates the original Plumbers Local 519 complaint.

Our Board of Directors has established a Special Litigation Committee to review the factual allegations and legal claims in this action. On May 15, 2018, the District Court granted the Special Litigation Committee’s motion to stay the case pending its investigation. The Special Litigation Committee’s report was filed on November 27, 2018, and recommended that the Company not pursue the claims asserted by the derivative plaintiffs. On December 20, 2018, the Special Litigation Committee filed a motion seeking deferral to its determination that the claims should be dismissed. Following a two-day evidentiary hearing on July 6-7, 2020, on July 17, 2020, the District Court entered an order granting the Special Litigation Committee’s motion and, thereafter, entered judgment in favor of the DISH Director Defendants.

On August 25, 2020, the derivative plaintiffs filed a notice of appeal to the Nevada Supreme Court, and on August 4, 2022, that Court unanimously affirmed the District Court’s judgment in favor of the Director Defendants. This matter is now concluded.

TQ Delta, LLC

On July 17, 2015, TQ Delta, LLC (“TQ Delta”) filed a complaint against us and our wholly-owned subsidiaries 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.”

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 EchoStar Corporation and its 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, we 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 us. 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 our 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 our 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 our 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 our petition. On February 10, 2018, the United States Patent and Trademark Office issued a final written decision on our 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. In a proposed supplemental report, TQ Delta’s damages expert contends that TQ Delta is entitled to \$251 million in damages.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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.” Uniloc is an entity that seeks to license an acquired patent portfolio without itself practicing any of the claims recited therein.

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.

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.

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 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. 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.

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.

Waste Disposal Inquiry

The California Attorney General and the Alameda County (California) District Attorney have investigated whether certain of our former waste disposal policies, procedures and practices violated the California Business and Professions Code and the California Health and Safety Code. On March 8, 2022, we entered into a settlement with those entities under which DISH Network agreed to pay certain civil penalties and other expenses, and to be subject to an injunction imposing certain waste management requirements for the next five years. On March 25, 2022, the Alameda County Superior Court entered the parties’ stipulated judgment. This outcome did not have a material effect on our results of operations, financial condition or cash flows. This matter is now concluded.

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.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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 two primary business segments: (1) Pay-TV; and (2) Wireless. 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 (including capitalized interest related to FCC authorizations) by segment were as follows:

	As of December 31,	
	2022	2021
	(In thousands)	
Total assets:		
Pay-TV	\$ 46,295,495	\$ 43,799,761
Wireless (1)	46,261,004	33,310,090
Eliminations (1)	(39,949,937)	(29,108,126)
Total assets	\$ 52,606,562	\$ 48,001,725

- (1) The increase primarily resulted from intercompany advances to purchase the 3.45–3.55 GHz band licenses and for capital expenditures related to our 5G Network Deployment. See Note 10 for further information.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

	<u>Pay-TV</u>	<u>Wireless</u>	<u>All Other & Eliminations</u>	<u>Consolidated Total</u>
	(In thousands)			
Year Ended December 31, 2022				
Total revenue	\$ 12,505,392	\$ 4,180,018	\$ (6,003)	\$ 16,679,407
Depreciation and amortization	428,472	288,601	—	717,073
Operating income (loss)	2,933,898	(888,232)	—	2,045,666
Interest income	1,872,645	5	(1,829,874)	42,776
Interest expense, net of amounts capitalized	(1,036,829)	(815,826)	1,829,874	(22,781)
Other, net	1,264	1,037,718	—	1,038,982
Income tax (provision) benefit, net	(911,955)	180,219	—	(731,736)
Net income (loss)	2,859,023	(486,116)	—	2,372,907
Year Ended December 31, 2021				
Total revenue	\$ 12,928,707	\$ 4,957,272	\$ (4,873)	\$ 17,881,106
Depreciation and amortization	538,836	186,016	—	724,852
Operating income (loss)	3,075,580	127,455	—	3,203,035
Interest income	1,346,502	6	(1,335,170)	11,338
Interest expense, net of amounts capitalized	(819,510)	(531,834)	1,335,170	(16,174)
Other, net	(2,917)	23,474	—	20,557
Income tax (provision) benefit, net	(853,362)	90,552	—	(762,810)
Net income (loss)	2,746,293	(290,347)	—	2,455,946
Year Ended December 31, 2020				
Total revenue	\$ 12,897,413	\$ 2,599,842	\$ (3,820)	\$ 15,493,435
Depreciation and amortization	613,926	100,626	—	714,552
Operating income (loss) (1)	2,903,183	(320,568)	—	2,582,615
Interest income	1,676,953	4	(1,654,223)	22,734
Interest expense, net of amounts capitalized	(922,876)	(744,321)	1,654,223	(12,974)
Other, net	2,020	(22,184)	—	(20,164)
Income tax (provision) benefit, net	(836,296)	138,021	—	(698,275)
Net income (loss)	2,822,984	(949,048)	—	1,873,936

(1) The year ended December 31, 2020 was negatively impacted by an “Impairment of long-lived assets” of \$356 million. See Note 2 for further information.

	<u>Pay-TV</u>	<u>Wireless</u>	<u>Total</u>
	(In thousands)		
Year Ended December 31, 2022			
Purchases of property and equipment (including capitalized interest related to FCC authorizations)	\$ 131,093	\$ 3,580,518	\$ 3,711,611
Year Ended December 31, 2021			
Purchases of property and equipment (including capitalized interest related to FCC authorizations)	\$ 173,485	\$ 1,790,042	\$ 1,963,527
Year Ended December 31, 2020			
Purchases of property and equipment (including capitalized interest related to FCC authorizations)	\$ 317,196	\$ 875,310	\$ 1,192,506

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Geographic Information. Revenue is attributed to geographic regions based upon the location where the goods and services are provided. All service revenue was derived from the United States. Substantially all of our long-lived assets reside in the United States.

The following table summarizes revenue by geographic region:

Revenue:	For the Years Ended December 31,		
	2022	2021	2020
	(In thousands)		
United States	\$ 16,639,627	\$ 17,821,876	\$ 15,442,371
Canada and Mexico	39,780	59,230	51,064
Total revenue	\$ 16,679,407	\$ 17,881,106	\$ 15,493,435

The revenue from external customers disaggregated by major revenue source was as follows:

Category:	For the Years Ended December 31,		
	2022	2021	2020
	(In thousands)		
Pay-TV subscriber and related revenue	\$ 12,351,918	\$ 12,748,334	\$ 12,702,345
Wireless services and related revenue	3,653,909	4,142,883	2,143,703
Pay-TV equipment sales and other revenue	153,474	180,373	195,068
Wireless equipment sales and other revenue	526,109	814,389	456,139
Eliminations	(6,003)	(4,873)	(3,820)
Total	\$ 16,679,407	\$ 17,881,106	\$ 15,493,435

17. Contract Balances

Our valuation and qualifying accounts as of December 31, 2022, 2021 and 2020 were as follows:

Allowance for credit losses	Balance at Beginning of Period	Current Period Provision for Expected Credit Losses	Write-offs Charged Against Allowance	Acquisitions	Balance at End of Period
For the years ended:					
December 31, 2022	\$ 38,534	\$ 79,664	\$ (73,845)	\$ 78	\$ 44,431
December 31, 2021	\$ 72,278	\$ 54,083	\$ (87,919)	\$ 92	\$ 38,534
December 31, 2020	\$ 19,280	\$ 84,697	\$ (56,075)	\$ 24,376	\$ 72,278

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.

	As of	
	December 31, 2022	December 31, 2021
	(In thousands)	
Contract liabilities	\$ 698,602	\$ 714,428

Our beginning of period contract liability recorded as customer contract revenue during 2022 was \$711 million.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

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.

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, 2022:				
Total revenue	\$ 4,330,620	\$ 4,209,963	\$ 4,095,451	\$ 4,043,373
Operating income (loss)	550,360	692,935	427,029	375,342
Net income (loss)	448,846	540,007	429,585	954,469
Net income (loss) attributable to DISH Network	432,651	522,832	412,230	935,520
Basic net income (loss) per share attributable to DISH Network	\$ 0.82	\$ 0.99	\$ 0.78	\$ 1.76
Diluted net income (loss) per share attributable to DISH Network	\$ 0.68	\$ 0.82	\$ 0.65	\$ 1.47
Year ended December 31, 2021:				
Total revenue	\$ 4,497,853	\$ 4,486,960	\$ 4,449,635	\$ 4,446,658
Operating income (loss)	864,576	906,738	717,705	714,016
Net income (loss)	641,563	681,451	567,520	565,412
Net income (loss) attributable to DISH Network	630,224	671,047	557,042	552,329
Basic net income (loss) per share attributable to DISH Network	\$ 1.20	\$ 1.27	\$ 1.05	\$ 1.04
Diluted net income (loss) per share attributable to DISH Network	\$ 0.99	\$ 1.06	\$ 0.88	\$ 0.87

19. Related Party Transactions

Related Party Transactions with EchoStar

Following the Spin-off, we and EchoStar have operated as separate publicly-traded companies and neither entity has any ownership interest in the other. However, a substantial majority of the voting power of the shares of both companies is owned beneficially by Charles W. Ergen, our Chairman, and by certain entities established by Mr. Ergen for the benefit of his family.

In connection with and following the Spin-off, we and EchoStar have entered into certain agreements pursuant to which we obtain certain products, services and rights from EchoStar, EchoStar obtains certain products, services and rights from us, and we and EchoStar have indemnified each other against certain liabilities arising from our respective businesses. Pursuant to the Share Exchange Agreement, among other things, EchoStar transferred to us certain assets and liabilities of the EchoStar technologies and EchoStar broadcasting businesses. Pursuant to the Master Transaction Agreement, among other things, EchoStar transferred to us certain assets and liabilities of its EchoStar Satellite Services segment.

In connection with the Share Exchange and the Master Transaction Agreement, we and EchoStar and certain of their subsidiaries entered into certain agreements covering, among other things, tax matters, employee matters, intellectual property matters and the provision of transitional services. In addition, certain agreements that we had with EchoStar have terminated, and we entered into certain new agreements with EchoStar. We also may enter into additional agreements with EchoStar in the future. The following is a summary of the terms of our principal agreements with EchoStar that may have an impact on our financial condition and results of operations.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

“Trade accounts receivable”

As of December 31, 2022 and 2021, trade accounts receivable from EchoStar was \$1 million. These amounts are recorded in “Trade accounts receivable” on our Consolidated Balance Sheets.

“Trade accounts payable”

As of December 31, 2022 and 2021, trade accounts payable to EchoStar was \$4 million and \$9 million, respectively. These amounts are recorded in “Trade accounts payable” on our Consolidated Balance Sheets.

“Equipment sales and other revenue”

During the years ended December 31, 2022, 2021 and 2020, we received \$6 million, \$6 million and \$8 million, respectively, for services provided to EchoStar. These amounts are recorded in “Equipment sales and other revenue” on our Consolidated Statements of Operations and Comprehensive Income (Loss). The agreements pertaining to these revenues are discussed below.

Real Estate Lease Agreements. We have entered into lease agreements pursuant to which we lease certain real estate to EchoStar. The rent on a per square foot basis for each of the leases is comparable to per square foot rental rates of similar commercial property in the same geographic areas, and EchoStar is responsible for its portion of the taxes, insurance, utilities and maintenance of the premises. The term of each lease is set forth below:

- *El Paso Lease Agreement.* During 2012, we began leasing certain space at 1285 Joe Battle Blvd., El Paso, Texas to EchoStar for an initial period ending on August 1, 2015, which also provides EchoStar with renewal options for four consecutive three-year terms. During the second quarter of 2015, EchoStar exercised its first renewal option for a period ending on August 1, 2018 and in April 2018 EchoStar exercised its second renewal option for a period ending in July 2021 and in May 2021 EchoStar exercised its third renewal option for a period ending in July 2024.
- *90 Inverness Lease Agreement.* In connection with the completion of the Share Exchange, effective March 1, 2017, EchoStar leases certain space from us at 90 Inverness Circle East, Englewood, Colorado for a period ending in February 2023. EchoStar has the option to renew this lease for four three-year periods.
- *Cheyenne Lease Agreement.* In connection with the completion of the Share Exchange, effective March 1, 2017, EchoStar began leasing certain space from us at 530 EchoStar Drive, Cheyenne, Wyoming for a period ending in February 2019. In August 2018, EchoStar exercised its option to renew this lease for a one-year period ending in February 2020. EchoStar has the option to renew this lease for 12 one-year periods. In connection with the Master Transaction Agreement, we and EchoStar amended this lease to provide EchoStar with certain space for a period ending in September 2023, with the option for EchoStar to renew for a one-year period upon 180 days’ written notice prior to the end of the term.

Collocation and Antenna Space Agreements. In connection with the completion of the Share Exchange, effective March 1, 2017, we entered into certain agreements pursuant to which we provide certain collocation and antenna space to HNS through February 2025 at the following locations: Cheyenne, Wyoming; Gilbert, Arizona; Monee, Illinois; Englewood, Colorado; and Spokane, Washington. During August 2017, we entered into certain other agreements pursuant to which we provide certain collocation and antenna space to HNS through August 2022 at the following locations: Monee, Illinois and Spokane, Washington. HNS has the option to renew each of these agreements for four three-year periods. HNS may terminate certain of these agreements with 180 days’ prior written notice to us at the following locations: Englewood, Colorado; and Spokane, Washington. The fees for the services provided under these agreements depend, among other things, on the number of racks leased and/or antennas present at the location.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Also in connection with the Master Transaction Agreement, in September 2019, we entered into an agreement pursuant to which we provide HNS with antenna space and power in Cheyenne, Wyoming for a period of five years commencing no later than October 2020, with four three-year renewal terms, with prior written notice no more than 120 days but no less than 90 days prior to the end of the then-current term.

TT&C Agreement – Master Transaction Agreement. In September 2019, in connection with the Master Transaction Agreement, we entered into an agreement pursuant to which we provide TT&C services to EchoStar for a period ending in September 2021, with the option for EchoStar to renew for a one-year period upon written notice at least 90 days prior to the initial expiration (the “MTA TT&C Agreement”). The fees for services provided under the MTA TT&C Agreement are calculated at either: (i) a fixed fee or (ii) cost plus a fixed margin, which will vary depending on the nature of the services provided. Either party is able to terminate the MTA TT&C Agreement for any reason upon 12 months’ notice. In June 2021, we amended the MTA TT&C Agreement to extend the term until September 2022 and added the option for EchoStar to renew for three one-year renewal terms. In August 2022, EchoStar exercised its first renewal option for a period ending in September 2023.

“Cost of services”

During the years ended December 31, 2022, 2021 and 2020, we incurred \$12 million, \$15 million and \$20 million, respectively, of costs for services provided to us by EchoStar. These amounts are recorded in “Cost of services” on our Consolidated Statements of Operations and Comprehensive Income (Loss). The agreements pertaining to these expenses are discussed below.

Hughes Broadband Distribution Agreement. Effective October 1, 2012, dishNET Satellite Broadband L.L.C. (“dishNET Satellite Broadband”), our indirect wholly-owned subsidiary, and HNS entered into a Distribution Agreement (the “Distribution Agreement”) pursuant to which dishNET Satellite Broadband has the right, but not the obligation, to market, sell and distribute the HNS satellite Internet service (the “Service”). dishNET Satellite Broadband pays HNS a monthly per subscriber wholesale service fee for the Service based upon the subscriber’s service level, and, beginning January 1, 2014, certain volume subscription thresholds. The Distribution Agreement also provides that dishNET Satellite Broadband has the right, but not the obligation, to purchase certain broadband equipment from HNS to support the sale of the Service. On February 20, 2014, dishNET Satellite Broadband and HNS amended the Distribution Agreement which, among other things, extended the initial term of the Distribution Agreement through March 1, 2024.

Thereafter, the Distribution Agreement automatically renews for successive one year terms unless either party gives written notice of its intent not to renew to the other party at least 180 days before the expiration of the then-current term. Upon expiration or termination of the Distribution Agreement, the parties will continue to provide the Service to the then-current dishNET subscribers pursuant to the terms and conditions of the Distribution Agreement.

EchoStar IX. We lease certain satellite capacity from EchoStar on EchoStar IX. Subject to availability, we generally have the right to continue to lease satellite capacity from EchoStar on EchoStar IX on a month-to-month basis. This lease expired on December 31, 2022.

“Cost of sales – equipment and other”

During the years ended December 31, 2022, 2021 and 2020, we incurred \$5 million, \$6 million and \$5 million, respectively, for satellite hosting, operations and maintenance services as well as transmission of certain data. These amounts are recorded in “Cost of sales – equipment and other” on our Consolidated Statements of Operations and Comprehensive Income (Loss). The agreements pertaining to these expenses are discussed below.

DBSD North America Agreement. On March 9, 2012, we completed the DBSD Transaction. During the second quarter of 2011, EchoStar acquired Hughes. Prior to our acquisition of DBSD North America and EchoStar’s acquisition of Hughes, DBSD North America and HNS entered into an agreement pursuant to which HNS provides, among other things, hosting, operations and maintenance services for DBSD North America’s satellite gateway and associated ground infrastructure. This agreement generally may be terminated by us at any time for convenience.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

TerreStar Agreements. On March 9, 2012, we completed the TerreStar Transaction. Prior to our acquisition of substantially all the assets of TerreStar and EchoStar's acquisition of Hughes, TerreStar and HNS entered into various agreements pursuant to which HNS provides, among other things, hosting, operations and maintenance services for TerreStar's satellite gateway and associated ground infrastructure. These agreements generally may be terminated by us at any time for convenience.

Hughes Equipment and Services Agreement. In February 2019, we and HNS entered into an agreement pursuant to which HNS will provide us with HughesNet Service and HughesNet equipment for the transmission of certain data related to our 5G Network Deployment. This agreement has an initial term of five years with automatic renewal for successive one-year terms unless terminated by DISH Network with at least 180 days' written notice to HNS or by HNS with at least 365 days' written notice to DISH Network.

"Selling, general and administrative expenses"

During the years ended December 31, 2022, 2021 and 2020, we incurred \$14 million, \$19 million and \$13 million, respectively, for selling, general and administrative expenses for services provided to us by EchoStar. These amounts are recorded in "Selling, general and administrative expenses" on our Consolidated Statements of Operations and Comprehensive Income (Loss). The agreements pertaining to these expenses are discussed below.

Real Estate Lease Agreements. We have entered into lease agreements pursuant to which we lease certain real estate from EchoStar. The rent on a per square foot basis for each of the leases is comparable to per square foot rental rates of similar commercial property in the same geographic area, and we are responsible for our portion of the taxes, insurance, utilities and maintenance of the premises. The term of each lease is set forth below:

- *Meridian Lease Agreement.* We lease all of 9601 S. Meridian Blvd. in Englewood, Colorado for a period ending on December 31, 2023.
- *100 Inverness Lease Agreement.* In connection with the completion of the Share Exchange, effective March 1, 2017, we lease certain space from EchoStar at 100 Inverness Terrace East, Englewood, Colorado for a period ending in December 2023. This agreement may be terminated by either party upon 180 days' prior notice.

Professional Services Agreement. Prior to 2010, in connection with the Spin-off, we entered into various agreements with EchoStar including the Transition Services Agreement, Satellite Procurement Agreement and Services Agreement, which all expired on January 1, 2010 and were replaced by a Professional Services Agreement. During 2009, we and EchoStar agreed that EchoStar shall continue to have the right, but not the obligation, to receive the following services from us, among others, certain of which were previously provided under the Transition Services Agreement: information technology, travel and event coordination, internal audit, legal, accounting and tax, benefits administration, program acquisition services and other support services. Additionally, we and EchoStar agreed that we shall continue to have the right, but not the obligation, to engage EchoStar to manage the process of procuring new satellite capacity for us (previously provided under the Satellite Procurement Agreement) and receive logistics, procurement and quality assurance services from EchoStar (previously provided under the Services Agreement) and other support services.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

In connection with the completion of the Share Exchange on February 28, 2017, DISH Network and EchoStar amended the Professional Services Agreement to, among other things, provide certain transition services to each other related to the Share Exchange Agreement. In addition, pursuant to the Master Transaction Agreement, we and EchoStar amended the Professional Services Agreement effective September 10, 2019 to, among other things, provide certain transition services to each other related to the Master Transaction Agreement and to remove certain services no longer necessary as a result of the Master Transaction Agreement. See above for further information on the Master Transaction Agreement. During March 2020, we and EchoStar added a service under the Professional Services Agreement whereby we provide EchoStar with rights to use certain satellite capacity in exchange for certain credits to amounts owed by us to EchoStar under the TerreStar Agreement described above. The Professional Services Agreement renewed on January 1, 2023 for an additional one-year period until January 1, 2024 and renews automatically for successive one-year periods thereafter, unless terminated earlier by either party upon at least 60 days' notice. However, either party may terminate the Professional Services Agreement in part with respect to any particular service it receives for any reason upon at least 30 days' notice.

Revenue for services provided by us to EchoStar under the Professional Services Agreement is recorded in "Equipment sales and other revenue" on our Consolidated Statements of Operations and Comprehensive Income (Loss).

City of Hallandale. During the second quarter of 2021, we and the other named defendants entered into a global settlement agreement with the City of Hallandale. On December 10, 2021, the court approved the settlement. Under the settlement agreement, we contributed an immaterial amount to the settlement.

Other Agreements - EchoStar

Tax Sharing Agreement. In connection with the Spin-off, we entered into a tax sharing agreement (the "Tax Sharing Agreement") with EchoStar which governs our respective rights, responsibilities and obligations after the Spin-off with respect to taxes for the periods ending on or before the Spin-off. Generally, all pre-Spin-off taxes, including any taxes that are incurred as a result of restructuring activities undertaken to implement the Spin-off, are borne by us, and we will indemnify EchoStar for such taxes. However, we are not liable for and will not indemnify EchoStar for any taxes that are incurred as a result of the Spin-off or certain related transactions failing to qualify as tax-free distributions pursuant to any provision of Section 355 or Section 361 of the Internal Revenue Code of 1986, as amended (the "Code") because of: (i) a direct or indirect acquisition of any of EchoStar's stock, stock options or assets; (ii) any action that EchoStar takes or fails to take; or (iii) any action that EchoStar takes that is inconsistent with the information and representations furnished to the Internal Revenue Service ("IRS") in connection with the request for the private letter ruling, or to counsel in connection with any opinion being delivered by counsel with respect to the Spin-off or certain related transactions. In such case, EchoStar is solely liable for, and will indemnify us for, any resulting taxes, as well as any losses, claims and expenses. The Tax Sharing Agreement will only terminate after the later of the full period of all applicable statutes of limitations, including extensions, or once all rights and obligations are fully effectuated or performed.

In light of the Tax Sharing Agreement, among other things, and in connection with our consolidated federal income tax returns for certain tax years prior to and for the year of the Spin-off, during 2013, we and EchoStar agreed upon a supplemental allocation of the tax benefits arising from certain tax items resolved in the course of the IRS' examination of these consolidated tax returns. As a result, we agreed to pay EchoStar \$82 million of the tax benefit we received or will receive. Any payment to EchoStar, including accrued interest, will be made at such time as EchoStar would have otherwise been able to realize such tax benefit. As of December 31, 2022, we have paid \$13 million of the tax benefit received, leaving \$69 million remaining to be paid.

In addition, during 2013, we and EchoStar agreed upon a tax sharing arrangement for filing certain combined state income tax returns and a method of allocating the respective tax liabilities between us and EchoStar for such combined returns, through the taxable period ending on December 31, 2017 (the "State Tax Arrangement"). During the third quarter of 2018, we and EchoStar amended the Tax Sharing Agreement and the 2013 agreements (the "Amendment").

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Under the Amendment, among other things, we are entitled to apply the benefit of EchoStar's 2009 net operating losses to our federal tax return for the year ended December 31, 2008, in exchange for paying EchoStar over time the value of the net annual federal income taxes paid by EchoStar that would have been otherwise offset by their 2009 net operating loss. In addition, the Amendment extends the term of the State Tax Arrangement for filing certain combined state income tax returns to the earlier to occur of: (1) termination of the Tax Sharing Agreement; (2) a change in control of either us or EchoStar; or (3) for any particular state, if we and EchoStar no longer file a combined tax return for such state. Beginning in 2020 and as it relates to 2020's state tax returns, DISH Network and EchoStar no longer file combined tax returns in any states. Per the terms of the Amendment, certain tax benefits received or payable related to combined tax returns were satisfied in 2022.

Tax Matters Agreement – Share Exchange. In connection with the completion of the Share Exchange, we and EchoStar entered into a Tax Matters Agreement, which governs certain rights, responsibilities and obligations with respect to taxes of the Transferred Businesses pursuant to the Share Exchange. Generally, EchoStar is responsible for all tax returns and tax liabilities for the Transferred Businesses for periods prior to the Share Exchange, and we are responsible for all tax returns and tax liabilities for the Transferred Businesses from and after the Share Exchange. Both we and EchoStar have made certain tax-related representations and are subject to various tax-related covenants after the consummation of the Share Exchange. Both we and EchoStar have agreed to indemnify each other if there is a breach of any such tax representation or violation of any such tax covenant and that breach or violation results in the Share Exchange not qualifying for tax free treatment for the other party. In addition, we have agreed to indemnify EchoStar if the Transferred Businesses are acquired, either directly or indirectly (e.g., via an acquisition of us), by one or more persons and such acquisition results in the Share Exchange not qualifying for tax free treatment. The Tax Matters Agreement supplements the Tax Sharing Agreement described above, which continues in full force and effect.

Tax Matters Agreement – Master Transaction Agreement. In connection with the completion of the Master Transaction Agreement, we and EchoStar entered into a Tax Matters Agreement, which governs certain rights, responsibilities and obligations with respect to taxes of the BSS Business pursuant to the Master Transaction Agreement. Generally, EchoStar is responsible for all tax returns and tax liabilities for the BSS Business for periods prior to the Master Transaction Agreement, and we are responsible for all tax returns and tax liabilities for the BSS Business from and after the Master Transaction Agreement. Both we and EchoStar have made certain tax-related representations in contemplation of the Master Transaction Agreement. Both we and EchoStar have agreed to indemnify each other if there is a breach of any such tax representation and that breach results in the Master Transaction Agreement not qualifying for tax free treatment for the other party. In addition, we have agreed to indemnify EchoStar if the BSS Business is acquired, either directly or indirectly (e.g., via an acquisition of us), by one or more persons and such acquisition results in the Master Transaction Agreement not qualifying for tax free treatment. The Tax Matters Agreement - Master Transaction Agreement supplements the Tax Sharing Agreement described above, which continues in full force and effect.

Patent Cross-License Agreements. In December 2011, we and EchoStar entered into separate patent cross-license agreements with the same third party whereby: (i) EchoStar and such third-party licensed their respective patents to each other subject to certain conditions; and (ii) we and such third-party licensed our respective patents to each other subject to certain conditions (each, a "Cross-License Agreement"). Each Cross License Agreement covers patents acquired by the respective party prior to January 1, 2017 and aggregate payments under both Cross-License Agreements total less than \$10 million. In December 2016, we and EchoStar independently exercised our respective options to extend each Cross-License Agreement to include patents acquired by the respective party prior to January 1, 2022.

Rovi License Agreement. On August 19, 2016, we entered into a ten-year patent license agreement (the "Rovi License Agreement") with Rovi Corporation ("Rovi") and, for certain limited purposes, EchoStar. EchoStar is a party to the Rovi License Agreement solely with respect to certain provisions relating to the prior patent license agreement between EchoStar and Rovi. There are no payments between us and EchoStar under the Rovi License Agreement.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Hughes Broadband Master Services Agreement. In March 2017, DISH Network L.L.C. (“DNLLC”) and HNS entered into the MSA pursuant to which DNLLC, among other things: (i) has the right, but not the obligation, to market, promote and solicit orders for the Hughes broadband satellite service and related equipment; and (ii) installs Hughes service equipment with respect to activations generated by DNLLC. Under the MSA, HNS will make certain payments to DNLLC for each Hughes service activation generated, and installation performed, by DNLLC. Payments from HNS for services provided are recorded in “Service revenue” on our Consolidated Statements of Operations and Comprehensive Income (Loss). For the years ended December 31, 2022, 2021 and 2020, these payments were \$8 million, \$9 million and \$16 million, respectively. The MSA has an initial term of five years with automatic renewal for successive one year terms. After the first anniversary of the MSA, either party has the ability to terminate the MSA, in whole or in part, for any reason upon at least 90 days’ notice to the other party. Upon expiration or termination of the MSA, HNS will continue to provide the Hughes service to subscribers and make certain payments to DNLLC pursuant to the terms and conditions of the MSA. For the years ended December 31, 2022, 2021 and 2020, we purchased broadband equipment from HNS of \$7 million, \$7 million and \$13 million, respectively, under the MSA.

Intellectual Property and Technology License Agreement – Share Exchange. In connection with the completion of the Share Exchange, effective March 1, 2017, we and EchoStar entered into an Intellectual Property and Technology License Agreement (“IPTLA”), pursuant to which we and EchoStar license to each other certain intellectual property and technology. The IPTLA will continue in perpetuity, unless mutually terminated by the parties. Pursuant to the IPTLA, EchoStar granted to us a license to its intellectual property and technology for use by us, among other things, in connection with our continued operation of the Transferred Businesses acquired pursuant to the Share Exchange Agreement, including a limited license to use the “EHOSTAR” trademark during a transition period. EchoStar retains full ownership of the “EHOSTAR” trademark. In addition, we granted a license back to EchoStar, among other things, for the continued use of all intellectual property and technology transferred to us pursuant to the Share Exchange Agreement that is used in EchoStar’s retained businesses.

Intellectual Property and Technology License Agreement – Master Transaction Agreement. In connection with the completion of the Master Transaction Agreement, effective September 10, 2019, we and EchoStar entered into an IPTLA (the “MTA IPTLA”), pursuant to which we and EchoStar license to each other certain intellectual property and technology. The MTA IPTLA will continue in perpetuity, unless mutually terminated by the parties. Pursuant to the MTA IPTLA, EchoStar granted to us a license to its intellectual property and technology for use by us, among other things, in connection with our continued operation of the BSS Business acquired pursuant to the Master Transaction Agreement, including a limited license to use the “ESS” and “EHOSTAR SATELLITE SERVICES” trademarks during a transition period. EchoStar retains full ownership of the “ESS” and “EHOSTAR SATELLITE SERVICES” trademarks. In addition, we granted a license back to EchoStar, among other things, for the continued use of all intellectual property and technology transferred to us pursuant to the Master Transaction Agreement that is used in EchoStar’s retained businesses.

DISH NETWORK CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - Continued

Related Party Transactions with 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,		
	2022	2021	2020
	(In thousands)		
Purchases (including fees):			
Purchases from NagraStar	\$ 43,416	\$ 45,944	\$ 53,902
	As of December 31,		
	2022	2021	
	(In thousands)		
Amounts Payable and Commitments:			
Amounts payable to NagraStar	\$ 7,422	\$ 11,988	
Commitments to NagraStar	\$ 3,272	\$ 5,630	

Related Party Transactions with Dish Mexico

Dish Mexico, S. de R.L. de C.V. (“Dish Mexico”) is an entity that provides direct-to-home satellite services in Mexico, which is owned 49% by EchoStar. We provide certain broadcast services and certain satellite services to Dish Mexico, which are recorded in “Equipment sales and other revenue” on our Consolidated Statements of Operations and Comprehensive Income (Loss).

The table below summarizes our transactions with Dish Mexico:

	For the Years Ended December 31,		
	2022	2021	2020
	(In thousands)		
Sales:			
Satellite capacity	\$ —	\$ 20,761	\$ 21,850
Uplink services and other	2,709	4,025	5,095
Total	\$ 2,709	\$ 24,786	\$ 26,945
	As of December 31,		
	2022	2021	
	(In thousands)		
Amounts Receivable:			
Amounts receivable from Dish Mexico	\$ 583	\$ 6,692	

THIS COMPOSITE ARTICLES OF INCORPORATION OF DISH NETWORK CORPORATION (THE "CORPORATION") REFLECTS THE PROVISIONS OF THE CORPORATION'S AMENDED AND RESTATED ARTICLES OF INCORPORATION, AS AMENDED AND RESTATED ON DECEMBER 31, 2007 AND NOVEMBER 3, 2015, AND ALL AMENDMENTS THERETO FILED WITH THE NEVADA SECRETARY OF STATE THEREAFTER ON OR PRIOR TO FEBRUARY 23, 2023, BUT IS NOT AN AMENDMENT OR RESTATEMENT THEREOF.

**COMPOSITE
AMENDED AND RESTATED ARTICLES OF INCORPORATION OF DISH NETWORK
CORPORATION**

(formerly known as EHOSTAR COMMUNICATIONS CORPORATION)

(incorporating all amendments and reflecting two separate two-for-one stock splits in 1999, and one two-for-one stock split in March 2000)

ARTICLE I

Name

The name of the corporation shall be DISH NETWORK 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 3,220,000,000 shares, consisting of 3,200,000,000 shares of common stock, par value \$0.01 per share ("Common Stock"), and 20,000,000 shares of preferred stock, par value \$0.01 per share ("Preferred Stock").

2. Common Stock. (a) Of the 3,200,000,000 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"), and 800,000,000 shares shall be designated Class C Common Stock ("Class C 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 General Corporation Law, 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 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 prices, as are set forth in the Board 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 Nevada General Corporation Law. 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. 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 three (3) in number, are as follows:

<u>Name</u>	<u>Address</u>
Charles W. Ergen	5701 S. Santa Fe Drive Littleton, CO 80102
James DeFranco	5701 S. Santa Fe Drive Littleton, CO 80102
R. Scott Zimmer	5701 S. Santa Fe Drive Littleton, CO 80102

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 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

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 Holding 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 of 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 EchoStar ceased to be a wholly-owned subsidiary of the Corporation 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 or 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 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 NGCL, 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), judgements, 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 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 attorney's 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 attorney's 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 attorney's 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 Nevada General Corporation Law, 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: Gregory S. Brown, and his address is 303 East 17th Avenue, Suite 1100, Denver, Colorado 80203.

ARTICLE XII
Registered Office and Registered Agent

The address of the registered office of the Corporation is One East First Street, Reno, Nevada 89501. The name of the Corporation's resident agent at that address is The Corporation Trust Company of Nevada. 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 or 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.

* * * *

DISH NETWORK CORPORATION AND SUBSIDIARIES
LIST OF SUBSIDIARIES
As of December 31, 2022

Subsidiary	State or Country of Incorporation	% of Ownership	Name Doing Business As
DISH Orbital Corporation	Colorado	100%	DOC
DISH DBS Corporation	Colorado	100%	DDBS
DISH Network L.L.C.	Colorado	100%	(1) DNLLC
DISH Operating L.L.C.	Colorado	100%	(1) SATCO
Echosphere L.L.C.	Colorado	100%	(1) Echosphere
Dish Network Service L.L.C.	Colorado	100%	(1) DNSLLC
DISH Wireless Holding L.L.C.	Colorado	100%	DISH Wireless
DISH Wireless L.L.C.	Colorado	100%	(2) DISH Wireless
DISH Broadcasting Corporation	Colorado	100%	(1) DBC
DISH Technologies L.L.C.	Colorado	100%	(1) DTLLC
Sling TV Holding L.L.C.	Colorado	100%	(1) Sling TV

(1) This is a subsidiary of DISH DBS Corporation

(2) This is a subsidiary of DISH Wireless Holding L.L.C.

List of Guarantor Subsidiaries

The 11.75% Senior Secured Notes due 2027 issued by DISH Network Corporation (incorporated in Nevada) are jointly and severally guaranteed on a full and unconditional basis by the following 100% owned subsidiaries of DISH Network Corporation as of December 31, 2022:

Entity	Jurisdiction of Incorporation or Organization
ParkerB.com Wireless L.L.C. (1)	Colorado
DISH Wireless Holding L.L.C.	Colorado
DISH Orbital Corporation	Colorado
DBSD North America, Inc. (1)	Delaware
Blockbuster Holding L.L.C.	Colorado
dishNET Holding L.L.C.	Colorado
DISH Wireless L.L.C. (2)	Colorado
DISH Wireless Leasing L.L.C. (1)	Colorado
DISH Satellite Services Corporation	Delaware

(1) This is a wholly-owned subsidiary of DISH Wireless Holding L.L.C.

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the registration statements (No. 333-237478, No. 333-231291, No. 333-159461, No. 333-146962, No. 333-136603, No. 333-106423, No. 333-66490, No. 333-36791, No. 333-05575, No. 033-80527 on Form S-8 and No. 333-234552 on Form S-3ASR) of our report dated February 22, 2023, with respect to the consolidated financial statements of DISH Network Corporation and the effectiveness of internal control over financial reporting.

/s/ KPMG LLP

Denver, Colorado
February 22, 2023

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Timothy A. Messner, 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 DISH Network Corporation, a Nevada corporation formed in April 1995, for the year ended December 31, 2022, 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.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Charles W. Ergen</u> Charles W. Ergen	Chairman	February 23, 2023
<u>/s/ Kathleen Q. Abernathy</u> Kathleen Q. Abernathy	Director	February 23, 2023
<u>/s/ George R. Brokaw</u> George R. Brokaw	Director	February 23, 2023
<u>/s/ Stephen J. Bye</u> Stephen J. Bye	Director	February 23, 2023
<u>/s/ James DeFranco</u> James DeFranco	Director	February 23, 2023
<u>/s/ Cantey Ergen</u> Cantey Ergen	Director	February 23, 2023
<u>/s/ Tom A. Ortolf</u> Tom A. Ortolf	Director	February 23, 2023
<u>/s/ Joseph T. Proietti</u> Joseph T. Proietti	Director	February 23, 2023

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
Section 302 Certification

I, W. Erik Carlson, certify that:

1. I have reviewed this Annual Report on Form 10-K of DISH Network 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 23, 2023

/s/ W. Erik Carlson

President and Chief Executive Officer and Director

CERTIFICATION OF CHIEF FINANCIAL OFFICER
Section 302 Certification

I, Paul W. Orban, certify that:

1. I have reviewed this Annual Report on Form 10-K of DISH Network 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 23, 2023

/s/ Paul W. Orban

Chief Financial Officer

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
Section 906 Certification

Pursuant to 18 U.S.C. § 1350, the undersigned officer of DISH Network 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, 2022 (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 23, 2023

Name: /s/ W. Erik Carlson

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.

CERTIFICATION OF CHIEF FINANCIAL OFFICER
Section 906 Certification

Pursuant to 18 U.S.C. § 1350, the undersigned officer of DISH Network 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, 2022 (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 23, 2023

Name: /s/ Paul W. Orban

Title: Chief 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.
