

**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, 2019.
OR

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

Commission File Number: 001-33807

EchoStar Corporation

(Exact name of registrant as specified in its charter)

Nevada
(State or other jurisdiction of incorporation or organization)

26-1232727
(I.R.S. Employer Identification No.)

100 Inverness Terrace East, Englewood, Colorado
(Address of principal executive offices)

80112-5308
(Zip Code)

(303) 706-4000
(Registrant's telephone number, including area code)

Not Applicable
(Former name, former address and former fiscal year, if changed since last report)

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

Class A common stock \$0.001 par value
(Title of each class)

The NASDAQ Stock Market LLC
(Name of each exchange on which registered)

SATS
(Ticker symbol)

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

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

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit 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. (Check one):

Large accelerated filer Accelerated filer Emerging growth company
Non-accelerated filer Smaller reporting 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 is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

As of June 30, 2019, the aggregate market value of Class A common stock held by non-affiliates of the registrant was \$2.1 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 that date.

As of February 10, 2020, the registrant's outstanding common stock consisted of 50,115,719 shares of Class A common stock and 47,687,039 shares of Class B common stock, each \$0.001 par value.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement to be filed in connection with its 2020 Annual Meeting of Shareholders are incorporated by reference in Part III.

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DISCLOSURE REGARDING FORWARD LOOKING STATEMENTS

This Annual Report on Form 10-K ("Form 10-K") contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, including but not limited to statements about our estimates, expectations, plans, objectives, strategies, financial condition, expected impact of regulatory developments and legal proceedings, opportunities in our industries and businesses and other trends and projections for the next fiscal quarter and beyond. All statements, other than statements of historical facts, may be forward-looking statements. Forward-looking statements may also be identified by words such as "anticipate," "intend," "plan," "goal," "seek," "believe," "estimate," "expect," "predict," "continue," "future," "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 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 potential known and unknown risks, uncertainties and other factors, many of which may be beyond our control and may pose a risk to our operating and financial condition. 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:

- significant risks related to the construction and operation of our satellites, such as the risk of not being able to timely complete the construction of or material malfunction on one or more of our satellites, changes in the space weather environment that could interfere with the operation of our satellites and our general lack of commercial insurance coverage on our satellites;
- our ability to implement and/or realize benefits of our domestic and/or international investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions and other strategic initiatives and transactions including, without limitation, the BSS Transaction (as defined herein);
- lawsuits relating to the BSS Transaction could result in substantial costs;
- our ability to realize the anticipated benefits of our current satellites and any future satellite we may construct or acquire;
- risks related to our foreign operations and other uncertainties associated with doing business internationally, including changes in foreign exchange rates between foreign currencies and the United States dollar, economic instability, political disturbances and the consequences of being subject to foreign regulation and foreign legal proceedings, including increased operations costs and potential fines and penalties for violations, which may be substantial;
- the failure of third-party providers of components, manufacturing, installation services and customer support services to appropriately deliver the contracted goods or services; and
- our ability to bring advanced technologies to market to keep pace with our customers and competitors.

Other factors that could cause or contribute to such differences include, but are not limited to, those discussed in Part I, Item 1A. Risk Factors and Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations of this Form 10-K and those discussed in other documents we file with the Securities and Exchange Commission ("SEC").

All cautionary statements made herein should be read as being applicable to all forward-looking statements wherever they appear. Investors should consider the risks and uncertainties described herein and should not place undue reliance on any forward-looking statements. We do not undertake, and specifically disclaim, any obligation to publicly release the results of any revisions that may be made to any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

Although we believe that the expectations reflected in any forward-looking statements are reasonable, we cannot guarantee future results, events, levels of activity, performance or achievements. We do not assume responsibility for the accuracy and completeness of any forward-looking statements. We assume no responsibility for updating forward-looking information contained or incorporated by reference herein or in any documents we file with the SEC, except as required by law.

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Should one or more of the risks or uncertainties described herein or in any documents we file with the SEC occur, or should underlying assumptions prove incorrect, our actual results and plans could differ materially from those expressed in any forward-looking statements.

PART I

ITEM 1. BUSINESS

OVERVIEW

EchoStar Corporation (which, together with its subsidiaries, is referred to as "EchoStar," the "Company," "we," "us" and "our") is a holding company that was organized in October 2007 as a corporation under the laws of the State of Nevada and has operated as a separately traded public company from DISH Network Corporation ("DISH") since 2008. A substantial majority of the voting power of the shares of each of EchoStar Corporation and DISH is owned beneficially by Charles W. Ergen, our Chairman, and by certain entities established for the benefit of his family. Our Class A common stock is publicly traded on the NASDAQ Global Select Market ("NASDAQ") under the symbol "SATS."

We are a global provider of broadband satellite technologies, broadband internet services for consumer customers, which include home and small to medium-sized businesses, and satellite services. We also deliver innovative network technologies, managed services and communications solutions for enterprise customers, which include aeronautical and government enterprises.

Our industry continues to evolve with the increasing worldwide demand for broadband internet access for information, entertainment and commerce. In addition to fiber and wireless systems, other technologies such as geostationary high throughput satellites, low-earth orbit ("LEO") networks, medium-earth orbit ("MEO") systems, balloons and High Altitude Platform Systems are expected to play significant roles in enabling global broadband access, networks and services. We intend to use our expertise, technologies, capital, investments, global presence, relationships and other capabilities to continue to provide broadband internet systems, equipment, networks and services for information, the internet-of-things, entertainment and commerce in North America and internationally for consumer and enterprise customers. We are closely tracking the developments in next-generation satellite businesses, and we are seeking to utilize our services, technologies, licenses and expertise to find new commercial opportunities for our business.

We currently operate in two business segments: Hughes and ESS. These segments are consistent with the way we make decisions regarding the allocation of resources, as well as how operating results are reviewed by our chief operating decision maker, who is the Company's Chief Executive Officer.

Our operations also include various corporate departments (primarily Executive, Treasury, Strategic Development, Human Resources, IT, Finance, Accounting, Real Estate and Legal) and other activities that have not been assigned to our operating segments such as costs incurred in certain satellite development programs and other business development activities, and gains or losses from certain of our investments. These activities, costs and income, as well as eliminations of intersegment transactions, are accounted for in *Corporate and Other* in our segment reporting.

In May 2019, we and one of our former subsidiaries, EchoStar BSS Corporation ("BSS Corp."), entered into a master transaction agreement (the "Master Transaction Agreement") with DISH and a wholly-owned subsidiary of DISH ("Merger Sub"). Pursuant to the terms of the Master Transaction Agreement, on September 10, 2019: (i) we transferred to BSS Corp. certain real property and the various businesses, products, licenses, technology, revenues, billings, operating activities, assets and liabilities primarily relating to the former portion of our ESS segment that managed, marketed and provided (1) broadcast satellite services primarily to DISH and its subsidiaries (together with DISH, "DISH Network") and our joint venture Dish Mexico, S. de R.L. de C.V., ("Dish Mexico") and its subsidiaries and (2) telemetry, tracking and control ("TT&C") services for satellites owned by DISH Network and a portion of our other businesses (collectively, the "BSS Business"); (ii) we distributed to each holder of shares of our Class A or Class B common stock entitled to receive consideration in the transaction an amount of shares of common stock of BSS Corp., par value \$0.001 per share ("BSS Common Stock"), equal to one share of BSS Common Stock for each share of our Class A or Class B common stock owned by such stockholder (the "Distribution"); and (iii) immediately after the Distribution, (1) Merger Sub merged with and into BSS Corp. (the "Merger"), such that BSS Corp. became a wholly-owned subsidiary of DISH and DISH owns and operates the BSS Business, and (2) each issued and outstanding share of BSS Common Stock owned by EchoStar stockholders was converted into the right to receive 0.23523769 shares of DISH Class A common stock, par value \$0.001 per share ("DISH Common Stock") (i) - (iii) collectively, the "BSS Transaction").

In connection with the BSS Transaction, we and DISH Network agreed to indemnify each other against certain losses with respect to breaches of certain representations and covenants and certain retained and assumed liabilities, respectively. Additionally, we and DISH and certain of our and their subsidiaries (i) entered into certain customary

agreements covering, among other things, matters relating to taxes, employees, intellectual property and the provision of transitional services; (ii) terminated certain previously existing agreements; and (iii) amended certain existing agreements and entered into certain new agreements pursuant to which we and DISH Network will obtain and provide certain products, services and rights from and to each other.

The BSS Transaction was structured in a manner intended to be tax-free to us and our stockholders for U.S. federal income tax purposes and was accounted for as a spin-off to our shareholders as we did not receive any consideration. Following the consummation of the BSS Transaction, we no longer operate the BSS Business, which was a substantial portion of our ESS segment. As a result of the BSS Transaction, the financial results of the BSS Business, except for certain real estate that transferred in the transaction, are presented as discontinued operations and, as such, excluded from continuing operations and segment results for all periods presented in our accompanying Consolidated Financial Statements and notes thereto in Item 15 of this Form 10-K ("Accompanying Consolidated Financial Statements").

During 2017, we and certain of our subsidiaries entered into a share exchange agreement (the "Share Exchange Agreement") with DISH and certain of its subsidiaries. We, and certain of our subsidiaries, received all the shares of the Hughes Retail Preferred Tracking Stock previously issued by us and one of our subsidiaries (together, the "Tracking Stock") in exchange for 100% of the equity interests of certain of our subsidiaries that held substantially all of our former EchoStar Technologies businesses and certain other assets (collectively, the "Share Exchange"). Following the consummation of the Share Exchange, we no longer operate our former EchoStar Technologies businesses, the Tracking Stock was retired and is no longer outstanding, and all agreements, arrangements and policy statements with respect to the Tracking Stock terminated. As a result of the Share Exchange, the financial results of the EchoStar Technologies businesses are presented as discontinued operations and, as such, have been excluded from continuing operations and segment results for all periods presented in our Accompanying Consolidated Financial Statements.

See Note 5 in our Accompanying Consolidated Financial Statements for further detail of our discontinued operations.

The Accompanying Consolidated Financial Statements have been prepared in accordance with generally accepted accounting principles in the United States ("U.S. GAAP"). All amounts reference results from continuing operations unless otherwise noted and are expressed in thousands of U.S. dollars, except share and per share amounts and unless otherwise noted. Additionally, certain prior period amounts have been adjusted to conform to the current period presentation.

BUSINESS STRATEGIES

Capitalize on domestic and international demand for broadband services. We intend to capitalize on the domestic and international demand for satellite-delivered broadband internet services and enterprise solutions by utilizing, among other things, our industry expertise, technology leadership, increased satellite capacity, access to spectrum resources, licenses and high-quality, reliable service to drive growth in consumer subscribers and enterprise customers. We also intend to continue to selectively explore opportunities to pursue investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions and other strategic initiatives and transactions, domestically and internationally that we believe may allow us to increase our market share, increase our satellite capacity, expand into new markets, obtain new customers, broaden our portfolio of services, products and intellectual property, make our business more valuable, align us for future growth and expansion, maximize the return on our investments and strengthen our business and relationships with our customers.

Expand satellite capacity and related infrastructure. During 2019, we continued the design and construction of a new, next-generation, high throughput geostationary satellite, with a planned 2021 launch, that is primarily intended to provide additional capacity for our HughesNet satellite internet service (the "HughesNet service") in North, Central and South America as well as enterprise services. We expect that our expertise in the identification, acquisition and development of satellite spectrum and orbital rights and satellite operations, together with our increased satellite capacity and existing, acquired or developed infrastructure, will continue to provide opportunities in domestic and international markets to enhance services to our existing and additional customers. We currently provide satellite broadband internet service in several Central and South American countries. We intend to continue to provide services to a broad customer base, including providers of satellite-delivered broadband, corporate communications and government services.

Continue to selectively explore new domestic and international strategic initiatives. We intend to continue to selectively explore opportunities to pursue investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions and other strategic initiatives and transactions, domestically and internationally, that we believe may allow

us to increase our existing market share, increase our satellite capacity, expand into new markets and new customers, broaden our portfolio of services, products and intellectual property and strengthen our relationships with our customers. For example, our joint ventures with Al Yah Satellite Communications Company PrJSC ("Yahsat") enable us to provide satellite broadband services across Africa, the Middle East and southwest Asia and expand our broadband internet services and enterprise solutions in Brazil.

Continue development of S-band and other hybrid spectrum resources. We intend to continue to explore the development and deployment of S-band technologies that we expect will reduce the cost of satellite communications for internet of things, machine-to-machine communications, public protection, disaster relief and other end-to-end services worldwide and the integration of our products and services into new global, hybrid networks that leverage multiple satellites and terrestrial technologies. We believe we remain in a unique position to deploy a mobile satellite service ("MSS")/complementary ground component ("CGC") network in the European Union and its member states ("EU") through our EchoStar XXI satellite, which was placed into service in November 2017, and the EUTELSAT 10A ("W2A") payload. We have further aligned ourselves to continue to develop the S-band spectrum globally by acquiring Sirion Global Pty Ltd., which we have renamed EchoStar Global Australia Pty Ltd ("EchoStar Global"), which holds global S-band non-geostationary satellite spectrum rights for MSS, and entering into a contract with Tyvak Nano-Satellite Systems, Inc. for the design and construction of S-band nano-satellites, with expected launches in the first half of 2020. In addition, in November 2019, we were granted an S-band spectrum license for terrestrial rights in Mexico.

Develop improved and new technologies. Our engineering capabilities provide us with the opportunity to develop and deploy cutting edge technologies, license our technologies to others and maintain a leading technological position in the industries in which we are active.

BUSINESS SEGMENTS

HUGHES SEGMENT

Our Products and Services

Our Hughes segment is a global provider of broadband satellite technologies and broadband internet services to consumer customers and broadband network technologies, managed services, equipment, hardware, satellite services and communications solutions to consumer and enterprise customers. The Hughes segment also designs, provides and installs gateway and terminal equipment to customers for other satellite systems. In addition, our Hughes segment designs, develops, constructs and provides telecommunication networks comprising satellite ground segment systems and terminals to mobile system operators and our enterprise customers.

We incorporate advances in technology to reduce costs and to increase the functionality and reliability of our products and services. Through advanced and proprietary methodologies, technologies, software and techniques, we continue to improve the efficiency of our networks. We invest in technologies to enhance our system and network management capabilities, specifically our managed services for enterprises. We also continue to invest in next generation technologies that can be applied to our future products and services.

We continue to focus our efforts on growing our consumer revenue by maximizing utilization of our existing satellites while planning for new satellites to be launched or acquired. Our consumer revenue growth depends on our success in adding new and retaining existing subscribers in our domestic and international markets across wholesale and retail channels. The growth of our enterprise businesses relies heavily on global economic conditions and the competitive landscape for pricing relative to competitors and alternative technologies. Service costs related to ongoing support for our direct and indirect customers and partners are typically impacted most significantly by our growth.

Our Hughes segment currently uses capacity from three of our satellites (the SPACEWAY 3 satellite, the EchoStar XVII satellite and the EchoStar XIX satellite), our Al Yah 3 Brazilian payload and additional satellite capacity acquired from third-party providers to provide services to our customers. Growth of our consumer subscriber base continues to be constrained in areas where we are nearing or have reached maximum capacity. While these constraints are expected to be resolved when we launch new satellites, we continue to focus on revenue growth in all areas and consumer subscriber growth in the areas where we have available capacity.

In May 2019, we entered into an agreement with Al Yah Satellite Communications Company PrJSC ("Yahsat") pursuant to which, in November 2019, Yahsat contributed its satellite communications services business in Brazil to us in

exchange for a 20% ownership interest in our existing Brazilian subsidiary that conducts our satellite communications services business in Brazil. The combined business provides broadband internet services and enterprise solutions in Brazil using the Telesat T19V satellite, the Eutelsat 65W satellite and Yahsat's Al Yah 3 satellite. Under the terms of the agreement, Yahsat may also acquire, for further cash investments, additional minority ownership interests in the business in the future provided certain conditions are met.

In May 2019, we also entered into an agreement with Bharti Airtel Limited ("BAL") and its subsidiary, Bharti Airtel Services Limited (together with BAL, "Bharti"), pursuant to which Bharti will contribute its very small aperture terminal ("VSAT") telecommunications services and hardware business in India to our two existing Indian subsidiaries that conduct our VSAT services and hardware business. The combined entities will provide broadband satellite and hybrid solutions for enterprise networks. Upon consummation of the transaction, Bharti will have a 33% ownership interest in the combined business. The completion of the transaction is subject to customary regulatory approvals and closing conditions. No assurance can be given that the transaction will be consummated on the terms agreed to or at all.

In August 2018, we entered into an agreement with Yahsat to establish a new entity, Broadband Connectivity Solutions (Restricted) Limited (together with its subsidiaries, "BCS"), to provide commercial Ka-band satellite broadband services across Africa, the Middle East and southwest Asia operating over Yahsat's Al Yah 2 and Al Yah 3 Ka-band satellites. The transaction was consummated in December 2018 when we invested \$100.0 million in cash in exchange for a 20% interest in BCS. Under the terms of the agreement, we may also acquire, for further cash investments, additional ownership interests in BCS in the future provided certain conditions are met. We supply network operations and management services and equipment to BCS.

In August 2017, we entered into a contract for the design and construction of the EchoStar XXIV satellite, a new, next-generation, high throughput geostationary satellite, with a planned 2021 launch. The EchoStar XXIV satellite is primarily intended to provide additional capacity for our HughesNet service in North, Central and South America as well as enterprise broadband services. If the manufacture and/or delivery of the EchoStar XXIV satellite is not met or is delayed, such failure could have a material adverse impact on our business operations, future revenues, financial position and prospects and our planned expansion of satellite broadband services throughout North, South and Central America. Capital expenditures associated with the construction and launch of the EchoStar XXIV satellite are included in Corporate and Other in our segment reporting.

In March 2017, we and DISH Network entered into a master service agreement (the "Hughes Broadband MSA"). Pursuant to the Hughes Broadband MSA, DISH Network, among other things, (i) has the right, but not the obligation, to market, promote and solicit orders and upgrades for our HughesNet service and related equipment and other telecommunication services; and (ii) installs HughesNet service equipment with respect to activations generated by DISH Network. As a result of the Hughes Broadband MSA, we have not earned, and do not expect to earn in the future, significant equipment revenue from our distribution agreement with DISH Network. We expect churn in the existing wholesale subscribers to continue to reduce *Services and other revenue* in the future.

We continue our efforts to expand our consumer satellite services business outside of the U.S. We have been delivering high-speed consumer satellite broadband services in Brazil since July 2016 and are also providing satellite broadband internet service in several other Central and South American countries. Additionally, in September 2015, we entered into 15-year agreements with affiliates of Telesat Canada for Ka-band capacity on the Telesat T19V satellite located at the 63 degree west longitude orbital location, which was launched in July 2018. Telesat T19V was placed in service during the fourth quarter of 2018 and augmented the capacity being provided by the EUTELSAT 65 West A satellite and the EchoStar XIX satellite in Central and South America.

Our Customers

Our enterprise customers include, but are not limited to, lottery agencies, gas station operators, aircraft connectivity providers and companies with multi-branch networks that rely on satellite or terrestrial networks for critical communication across wide geographies. Most of our enterprise customers have contracts with us for the services they purchase. Our Hughes segment also designs, provides and installs gateway and terminal equipment to customers for other satellite systems and provides satellite ground segment systems and terminals for other satellite systems, including mobile system operators. Developments toward the launch of next-generation satellite systems, including LEO, MEO and geostationary systems, could provide additional opportunities to drive the demand for our equipment, hardware, technology and services.

Our Competition

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

In our consumer broadband satellite technologies and internet services markets, we compete against traditional telecommunications and wireless carriers, other satellite internet providers, as well as digital subscriber line ("DSL"), fiber and cable internet service providers offering competitive services in many markets we seek to serve. Cost, speed and accessibility are key determining factors in the selection of a service provider by the consumer. Our primary satellite competitor in our North American consumer market is ViaSat Communications, Inc., which is owned by ViaSat, Inc. ("ViaSat"). ViaSat has also announced plans to enter the South and Central American consumer markets. We seek to differentiate ourselves based on the ubiquitous availability of our service, quality, proprietary technology, and distribution channels.

In our enterprise markets, we compete against providers of satellite-based and terrestrial-based networks, including fiber, DSL, cable modem service, multiprotocol label switching and internet protocol-based virtual private networks.

Our principal competitors for the supply of very-small-aperture terminal satellite networks are Gilat Satellite Networks Ltd, ViaSat, and ST Engineering iDirect, Inc. To differentiate ourselves from our competitors, we emphasize particular technological features of our products and services, our ability to customize networks and perform desired development work and the quality of our customer service. We also face competition from resellers and numerous local companies who purchase equipment and sell services to local customers, including domestic and international telecommunications operators, cable companies and other major carriers.

Manufacturing

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

ESS SEGMENT

Our Services

Our ESS segment provides satellite services on a full-time and/or occasional-use basis to U.S. government service providers, internet service providers, broadcast news organizations, content providers and private enterprise customers. We operate our ESS business using primarily the EchoStar IX satellite and the EchoStar 105/SES-11 satellite and related infrastructure. Revenue in our ESS segment depends largely on our ability to continuously make use of our available satellite capacity with existing customers and our ability to enter into commercial relationships with new customers. Our ESS segment, like others in the fixed satellite services industry, has encountered, and may continue to encounter, negative pressure on transponder rates and demand.

Our Customers

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

- **Fixed Satellite Services ("FSS").** We provide satellite services to broadcast news organizations, internet service providers and content providers who use our satellites to deliver programming and internet. Our satellites are also used for the transmission of live sporting events, internet access, disaster recovery and satellite news gathering services.
- **Government Services.** We provide satellite and technical services to U.S. government service providers.

- **Network Services.** We provide satellite services to companies for private networks that allow delivery of video and data services for corporate communications. Our satellites can be used for point-to-point or point to multi-point communications.

Our Competition

Our ESS segment competes against larger, well-established satellite service companies, such as Intelsat S.A., SES S.A., Telesat and Eutelsat Communications S.A., in an industry that is characterized by long-term contracts and high costs for customers to change service providers. Several of our competitors maintain key North American and other international orbital slots that may further limit our ability to compete and offer competitive pricing.

OTHER BUSINESS OPPORTUNITIES

We intend to continue to selectively explore opportunities to pursue investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions and other strategic initiatives and transactions, domestically and internationally, that we believe may allow us to increase our existing market share, increase our satellite capacity, expand into new markets and new customers, broaden our portfolio of services, products and intellectual property, make our business more valuable, align us for future growth and expansion, maximize the return on our investments and strengthen our business and relationships with our customers. We may allocate or dispose of significant resources for long-term value that may not have a short or medium-term or any positive impact on our revenue, results of operations, or cash flow.

OUR SATELLITE FLEET

Our operating satellite fleet as of December 31, 2019 consists of both owned and leased satellites as follows:

Satellite	Segment	Launch Date	Nominal Degree Orbital Location (Longitude)	Depreciable Life (In Years)
Owned:				
SPACEWAY 3 ⁽¹⁾	Hughes	August 2007	95 W	10
EchoStar XVII	Hughes	July 2012	107 W	15
EchoStar XIX	Hughes	December 2016	97.1 W	15
Al Yah 3 ⁽²⁾	Hughes	January 2018	20 W	7
EchoStar IX ⁽³⁾	ESS	August 2003	121 W	12
EUTELSAT 10A ("W2A") ⁽⁴⁾	Corporate and Other	April 2009	10 E	-
EchoStar XXI	Corporate and Other	June 2017	10.25 E	15
Finance leases:				
Eutelsat 65 West A	Hughes	March 2016	65 W	15
Telesat T19V	Hughes	July 2018	63 W	15
EchoStar 105/SES-11	ESS	October 2017	105 W	15

(1) Depreciable life represents the remaining useful life as of June 8, 2011, the date EchoStar completed its acquisition of Hughes Communications, Inc. ("Hughes Communication") and its subsidiaries (the "Hughes Acquisition").

(2) Upon consummation of our joint venture with Yahsat in Brazil in November 2019, we acquired the Brazilian Ka-band payload on this satellite. Depreciable life represents the remaining useful life of the payload as of November 2019.

(3) We own the Ka-band and Ku-band payloads on this satellite.

(4) We acquired the S-band payload on this satellite, which, prior to the acquisition in December 2013, experienced an anomaly at the time of the launch. As a result, the S-band payload is not fully operational.

Construction in progress as of December 31, 2019 included our EchoStar XXIV satellite, which has a planned 2021 launch, and our S-band nano-satellites, with expected launches in the first half of 2020.

Satellite Anomalies and Impairments

Our satellites may experience anomalies from time to time, some of which may have a significant adverse effect on their remaining useful lives, the commercial operation of the satellites or our operating results or financial position. We are not aware of any anomalies with respect to our owned or leased satellites that have had any such significant adverse effect during the year ended December 31, 2019. There can be no assurance, however, that anomalies will not have any such adverse effects in the future. In addition, there can be no assurance that we can recover critical transmission capacity in the event one or more of our satellites were to fail.

We generally do not carry in-orbit insurance on our satellites because we have assessed that the cost of insurance is not economical relative to the risk of failures. Therefore, we generally bear the risk of any in-orbit failures. Pursuant to the terms of the agreements governing certain portions of our indebtedness and our joint venture agreements with Yahsat, we are required, subject to certain limitations on coverage, to maintain only for the SPACEWAY 3 satellite, the EchoStar XVII satellite and the Al Yah 3 Brazilian payload, insurance or other contractual arrangements during the commercial in-orbit service of such satellite. We were previously required to maintain similar insurance or other contractual arrangements for the EchoStar XVI satellite, which we transferred to DISH Network pursuant to the BSS Transaction. Our other satellites and payloads, either in orbit or under construction, are not covered by launch or in-orbit insurance or other contractual arrangements. We will continue to assess circumstances going forward and make insurance-related decisions on a case-by-case basis.

We evaluate our satellites for impairment and test for recoverability whenever events or changes in circumstances indicate that their carrying amount may not be recoverable. Certain of the anomalies previously disclosed may be considered to represent a significant adverse change in the physical condition of a particular satellite. However, based on the redundancy designed within each satellite, certain of these anomalies are not necessarily considered to be significant events that would require a test of recoverability.

GOVERNMENT REGULATIONS

We are subject to comprehensive regulation by the FCC for our domestic, as well as various international, satellite and telecommunications operations and equipment businesses. We are also regulated by other U.S. federal agencies, state and local authorities, the International Telecommunication Union ("ITU") and certain foreign governments, including those in the EU, Australia, India and North, South and Central American countries. In addition, we are also subject to the export control laws and regulations and trade sanctions laws and regulations of the U.S. and other countries with respect to the export of telecommunications equipment and services. Depending upon the circumstances, non-compliance with applicable legislation or regulations could result in suspension or revocation of our licenses or authorizations, the termination or loss of contracts or the imposition of contractual damages, civil fines or criminal penalties.

The following summary of regulations and legislation is not intended to describe all present and proposed government regulation and legislation affecting our business. Government regulations that are currently the subject of judicial or administrative proceedings, draft legislation or administrative proposals could impact us and our industries to varying degrees. The FCC and other regulators from time to time initiate proceedings that could adversely impact our satellite operations, including spectrum usage. We cannot predict either the outcome of these proceedings or proposals or any potential impact they might have on the industry or on our operations.

FCC Regulations Applicable to Our Operations

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

- the assignment of satellite radio frequencies and orbital locations to specific services and companies, the licensing of satellites and earth stations and the granting of related authorizations;
- approval for the relocation of satellites to different orbital locations, the replacement of a satellite with another new or existing satellite and the authorization of specific earth stations to communicate with such newly relocated satellites;
- ensuring compliance with the terms and conditions of assignments, licenses, authorizations and approvals;

- avoiding harmful interference with other radio frequency emitters; and
- ensuring compliance with other applicable provisions of the Communications Act and FCC rules and regulations.

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

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

State and Local Regulation

We are also regulated by state and local authorities. While the FCC has preempted many state and local regulations that would impair the installation and use of very-small-aperture terminals and other consumer satellite dishes, our businesses nonetheless are subject to state and local regulation, including, among others, obtaining regulatory authorizations and zoning regulations that affect the ability to install these consumer satellite earth station antennas.

International Regulation

Foreign Administrations' Jurisdiction Over Satellite and Terrestrial Operations. Some of our satellites and earth stations are licensed in foreign jurisdictions. We also have terrestrial authorizations in foreign jurisdictions. In order to provide service to a foreign location from our satellites, we are required to obtain approvals from the FCC and foreign administrative agencies. The laws and regulations addressing access to satellite and terrestrial systems vary from country to country. In most countries, a license is required to provide our services and to operate satellite earth stations. Such licenses may impose certain conditions, including implementation and operation of the satellite system in a manner consistent with certain milestones (such as for contracting, satellite design, construction, launch and implementation of service), that the satellite or its launch be procured through a national entity, that the satellite control center be located in national territory, that a license be obtained prior to launching or operating the satellite, or that a license be obtained before interconnecting with the local switched telephone network and we may be subject to penalties or fines for failing to meet such conditions. Additionally, some countries may have restrictions on the services we provide and how we provide them and/or may limit the rates that can be charged for the services we provide or impose other service terms or restrictions. Furthermore, foreign countries in which we currently, or may in the future, operate may not authorize us access to all of the spectrum that we need to provide service in a particular country.

The ITU Frequency and Orbital Location Registration. The orbital location and frequencies for our satellites are subject to the frequency registration and coordination process of the ITU. The ITU Radio Regulations define the international rules, regulations and rights for a satellite and associated earth stations to use specific radio frequencies at a specific orbital location. These rules, which include deadlines for the bringing of satellite networks into use, differ depending on the type of service to be provided and the frequencies to be used by the satellite. On our behalf, various countries have made and may in the future make, additional filings for the frequency assignments at particular orbital locations that are used or to be used by our current satellite networks and potential future satellite networks we may build or acquire. In the event the international coordination process that is triggered by ITU filings under applicable rules is not successfully completed, or that the requests for modification of the broadcast satellite services plan regarding the allocation of orbital locations and frequencies are not granted by the ITU, we will have to operate the applicable satellite(s) on a non-interference basis, which could have an adverse impact on our business operations. If we cannot

do so, we may have to cease operating such satellite(s) at the affected orbital locations. We cannot be sure of the successful outcome of these ITU coordination processes. We make commercially reasonable efforts to cooperate with the filing nation in the preparation of ITU filings, coordination of our operations in accordance with the relevant ITU Radio Regulations and responses to relevant ITU inquiries.

Registration in the United Nations ("UN") Registry of Space Objects. The U.S. and other jurisdictions in which we license satellites are generally parties to the UN Convention on the Registration of Objects Launched into Outer Space, which requires a satellite's launching state to register the satellite as a space object. 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.

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

Export Control Regulation

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

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

Environmental Regulation

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

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

Our environmental compliance costs, capital and other expenditures to date have not been material, and we do not expect them to be material in 2020. However, environmental requirements are complex, change frequently and have

become more stringent over time. Accordingly, we cannot provide assurance that these requirements will not change or become more stringent in the future in a manner that could have a material adverse effect on our business and/or environmental compliance costs, capital or other expenditures.

PATENTS AND TRADEMARKS

We currently rely on a combination of patent, trade secret, copyright and trademark law, together with licenses, non-disclosure and confidentiality agreements and technical measures, to establish and protect proprietary rights in our products. We hold U.S. and foreign patents covering various aspects of our products and services. The duration of each of our U.S. patents is generally 20 years from the earliest filing date to which the patent has priority. We have granted licenses to use our trademarks and service-marks to affiliates and resellers worldwide, and we typically retain the right to monitor the use of those marks and impose significant restrictions on their use in efforts to ensure a consistent brand identity. We protect our proprietary rights in our software through software licenses that, among other things, require that the software source code be maintained as confidential information and that prohibit any reverse-engineering of that code.

We believe that our patents are important to our business. We also believe that, in some areas, the improvement of existing products and the development of new products, as well as reliance upon trade secrets and unpatented proprietary know-how, are important in establishing and maintaining a competitive advantage. We believe, to a certain extent, that the value of our products and services are dependent upon our proprietary software, hardware and other technology remaining trade secrets and/or subject to copyright protection. Generally, we enter into non-disclosure and invention assignment agreements with our employees, subcontractors and certain customers and other business partners. Please see Item 3. Legal Proceedings of this Form 10-K for more information.

RESEARCH AND DEVELOPMENT AND ENGINEERING

We have a skilled and multi-disciplined engineering organization that develops our products and services. Our in-house technological capability includes a wide range of skills required to develop systems, hardware, software and firmware used in our products and services.

With respect to hardware development, we have skill sets that include complex digital designs, radio frequency and intermediate frequency analog designs, advanced application-specific integrated circuit designs and sophisticated consumer and system level packaging designs. We also have extensive experience in developing products for high-volume, low-cost manufacturing for the consumer industry, including dual mode satellite and wireless handsets.

As a complement to our hardware development, we have extensive experience in designing reliable, real time, embedded software systems as part of our communication systems and services offerings. For example, our broadband product line for the enterprise market supports an extensive range of protocols for data communications. Our engineers have also developed many large turnkey systems for our customers by designing the overall solution, implementing the various subsystems, deploying the entire network and user terminals, integrating and verifying the operational system and ultimately training the customers' technicians and operators.

Costs incurred in research and development activities are generally expensed as incurred. A significant portion of our research and development costs are incurred in connection with the specific requirements of a customer's order. In such instances, the amounts for these customer funded development efforts are included in *Cost of sales - equipment* in the Consolidated Statements of Operations in our Accompanying Consolidated Financial Statements.

GEOGRAPHIC AREA DATA AND TRANSACTIONS WITH MAJOR CUSTOMERS

For principal geographic area data and transactions with major customers for 2019, 2018 and 2017, see Note 21 in our Accompanying Consolidated Financial Statements. See Item 1A. Risk Factors for information regarding risks related to our foreign operations.

EMPLOYEES

As of December 31, 2019, we had approximately 2,300 employees and generally consider relations with them to be good. Other than approximately 200 of our employees located in Italy and Brazil, none are represented by a union.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended, and accordingly file an annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and other information with the SEC. Our public filings are maintained on the SEC's internet site at <http://www.sec.gov>, which contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

WEBSITE ACCESS

Our 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 Securities Exchange Act of 1934, as amended, may also be accessed free of charge through our website at <http://www.echostar.com> as soon as reasonably practicable after we have electronically filed such material with, or furnished it to, the SEC.

We have adopted a written code of ethics that applies to all of our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer and controller, in accordance with 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 <http://www.echostar.com>. In the event that we make changes in, or provide waivers of, the provisions of this code of ethics that the SEC requires us to disclose, we intend to disclose these events on our website.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

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

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

Name	Age	Position
Charles W. Ergen	66	Chairman
Michael T. Dugan	71	Chief Executive Officer, President and Director
David J. Rayner	62	Executive Vice President, Chief Financial Officer, Chief Operating Officer and Treasurer
Anders N. Johnson	62	Chief Strategy Officer and President, EchoStar Satellite Services L.L.C.
Pradman P. Kaul	73	President, Hughes Communications and Director
Dean A. Manson	53	Executive Vice President, General Counsel and Secretary

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

Michael T. Dugan. Mr. Dugan has served as our Chief Executive Officer and President since November 2009. Mr. Dugan has also served as a member of our Board of Directors since our formation in 2007. Mr. Dugan served as a senior advisor to EchoStar from January 1, 2008 until November 2009. From May 2004 to December 2007, he was a director of DISH and, from 1990 to 2006, he served in several executive roles at DISH Network, including as President, Chief Operating Officer, Chief Technical Officer and senior advisor.

David J. Rayner. Mr. Rayner has served as our Executive Vice President, Chief Financial Officer and Treasurer since December 2012 and as our Chief Operating Officer since September 2016. From November 2011 to November 2012, Mr. Rayner served as Chief Financial Officer of Tendril Networks, Inc., a Boulder, Colorado software company. Mr. Rayner served as our Chief Financial Officer from June 2010 to November 2011 and served as our Chief Administrative Officer from January 2008 to June 2010. Prior to that, Mr. Rayner served as Executive Vice President of Installation and Service Networks of DISH and previously as Chief Financial Officer of DISH. Before joining DISH in December 2004, Mr. Rayner served as Senior Vice President and Chief Financial Officer of Time Warner Telecom in Denver, beginning in June 1998.

Anders N. Johnson. Mr. Johnson has served as President of EchoStar Satellite Services L.L.C. since June 2011 and as our Chief Strategy Officer since September 2016. Before joining EchoStar, Mr. Johnson was most recently at SES World Skies where he served as Senior Vice President of Strategic Satellite Development. Mr. Johnson joined SES GLOBAL after the combination of GE Americom and SES GLOBAL in 2001. Prior to SES GLOBAL, Mr. Johnson worked at GE Capital beginning in 1985 in a variety of executive level roles in Satellite Services, Aviation Services and Transportation & Industrial Financing.

Pradman P. Kaul. Mr. Kaul has served as President of Hughes Communications since its formation in February 2006 and as President of Hughes Network Systems, LLC, a wholly owned subsidiary of Hughes Communications (and together with Hughes Communications, "Hughes") since 2000. Mr. Kaul has also served as a member of our Board of Directors since August 2011 as well as a member of the board of directors of Hughes Communications from February 2006 until June 2011. Previously, Mr. Kaul served as the Chief Operating Officer, Executive Vice President and Director of Engineering of Hughes Network Systems, LLC.

Dean A. Manson. Mr. Manson has served as our Executive Vice President, General Counsel and Secretary since November 2011 and is responsible for all our legal and government affairs. Mr. Manson joined our subsidiary Hughes

Network Systems, LLC in 2000 from the law firm of Milbank, Tweed, Hadley & McCloy LLP, where he focused on international project finance and corporate transactions and was appointed General Counsel in 2004.

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

ITEM 1A. RISK FACTORS

The risks and uncertainties described below are not the only ones facing us. If any of the following events occur, our business, financial condition, results of operation, prospects or ability to fund a share or debt repurchase program, invest capital in or otherwise run our business, execute on our strategic plans or return capital to our shareholders could be materially and adversely affected.

GENERAL RISKS AFFECTING OUR BUSINESS

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

Our future success may depend on the existence of, and our ability to capitalize on, opportunities to acquire or develop other businesses or technologies or partner with other companies that could complement, enhance or expand our current business, services or products or that may otherwise offer us growth opportunities. We may pursue investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions or other strategic initiatives and transactions or development activities, including, without limitation, the design, development, construction, acquisition and launch of new satellites, to complement or expand our business and satellite fleet. Any such acquisitions, dispositions, activities, transactions or investments that we are able to identify and complete which may become substantial over time, involve a high degree of risk, including, but not limited to, the following:

- the risks associated with developing and constructing new satellites;
- the diversion of our management's attention from our existing business to integrate or divide the operations and personnel of the acquired, disposed or combined business, technology or joint venture and/or to engage in such investments, dispositions and/or other activities;
- the ability and capacity of our management team to carry out all of our business plans, including with respect to our existing businesses and any businesses we acquire or embark on in the future;
- possible adverse effects on our and our targets' and partners' business, financial condition or operating results during the integration process;
- exposure to significant financial losses if the transactions, activities, investments, dispositions and/or the underlying ventures are not successful and/or we are unable to achieve the intended objectives of the transaction, disposition or investment;
- the inability to obtain in the anticipated time frame, or at all, any regulatory approvals required to complete proposed acquisitions, dispositions, activities, transactions or investments;
- the risks associated with complying with regulations applicable to the acquired or developed business or technologies which may cause us to incur substantial expenses;
- the inability to realize anticipated benefits or synergies from acquisitions, dispositions, investments, alliances and/or the development and launch of new satellites;
- the disruption of relationships with employees, vendors or customers; and
- the risks associated with foreign and international operations and/or investments or dispositions.

New investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions, development activities, including, without limitation, the design, development, construction and launch of new satellites and other strategic initiatives may require the commitment of significant capital that may otherwise be directed to investments in our existing businesses or be distributed to shareholders.

Our strategic initiatives may not be successfully implemented, may not elicit the expected customer response in the market and may result in competitive reactions.

We intend to continue to selectively explore opportunities to pursue investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions and other strategic initiatives and transactions, domestically and internationally, that we believe may allow us to increase our existing market share, increase our satellite capacity, expand into new markets, obtain new customers, broaden our portfolio of services, products and intellectual property, make our business more valuable, align us for future growth and expansion, maximize the return on our investments and strengthen our

business and relationships with our customers. We may allocate significant resources for long-term initiatives that may not have a short or medium-term or any positive impact on our revenue, results of operations, or cash flow. The successful implementation of our strategic initiatives requires an investment of time, talent and money and is dependent upon a number of factors some of which are not within our control. Those factors include the ability to execute such initiatives in new and existing markets, the response of existing and potential new customers and the actions or reactions of competitors. If we fail to properly execute or deliver products or services that address customers' expectations, it may have an adverse effect on our ability to retain and attract customers and may increase our costs and reduce our revenue. Similarly, competitive actions or reactions to our initiatives or advancements in technology or competitive products or services could impair our ability to execute those strategic initiatives or advancements. In addition, new strategic initiatives may face barriers to entering new or existing markets with established or new competitors. There can be no assurance that we will successfully implement these strategic initiatives or that, if successfully pursued, they will have the desired effect on our business or results of operations.

The failure to adequately anticipate the need for satellite capacity or the inability to obtain satellite capacity for our Hughes segment could harm our results of operations.

Our Hughes segment has made substantial contractual commitments for satellite capacity based on our existing customer contracts and backlog. If our existing customer contracts were to be terminated prior to their respective expiration dates, we may be committed to maintaining excess satellite capacity for which we will have insufficient revenue to cover our costs, which would have a negative impact on our margins and results of operations. Alternatively, we may not have sufficient satellite capacity available from our satellites or purchased from third parties to meet demand and we may not be able to quickly or easily adjust our capacity to changes in demand. At present, until the launch and operation of additional satellites, there is limited availability of capacity on the frequencies we use in North America, including within our own fleet of satellites, which could materially and adversely affect our ability to provide services to customers and grow our revenue and business. In addition, following the consolidation of the FSS industry, the main FSS providers in North America and a number of smaller regional providers own and operate the current satellites that are available for our capacity needs. The failure of any of these FSS providers to replace existing satellite assets at the end of their useful lives or a downturn in their industry as a whole could reduce the satellite capacity available to us. Our business and results of operations could be adversely affected if we are not able to renew our capacity leases at economically viable rates, or if capacity is not available due to problems experienced by these FSS providers. Our ability to provide additional capacity for subscriber growth in our North American consumer market could also be adversely affected by regulations and/or legislation in the U.S. that enable or propose to enable the use of a portion of the frequency bands, we currently use or in the future intend to use for satellite services, 5G mobile terrestrial services or other uses. These bands include the Ka-band, where we operate our broadband gateway earth stations and other bands in which we may operate in the future. Such regulation or legislation could limit our ability to use the Ka-band and/or other bands, limit our flexibility to change the way in which we use the Ka-band and/or adversely impact our ability to use additional bands in the future. Other countries in which we currently, or may in the future, operate are also considering regulations that could similarly limit access to the Ka-band or other frequency bands.

We could face decreased demand and increased pricing pressure to our products and services due to competition.

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

- In our consumer market, our Hughes segment faces competition primarily from DSL, fiber, fixed wireless and cable internet service providers. Also, other telecommunications, satellite and wireless broadband companies have launched or are planning the launch of consumer internet access services in competition with our service offerings in North, Central and South America. Some of these competitors offer consumer services and hardware at lower prices, higher speeds and/or higher capacity than ours. In addition, terrestrial alternatives do not require our external dish, which may limit customer acceptance of our products. Further, government funding for competing products and services may reduce the demand for our products and services. We may be unsuccessful in competing effectively against DSL, fiber, fixed wireless and cable internet service providers and other satellite broadband providers, which could harm our business, operating results and financial condition.

- In our enterprise network communications market, our Hughes segment faces competition from providers of terrestrial-based networks, such as fiber, DSL, cable modem service, multiprotocol label switching and internet protocol-based virtual private networks, which may have advantages over satellite networks for certain customer applications. Although we also sell terrestrial services to this market, we may not be as cost competitive as other providers and it may become more difficult for us to compete. The network communications industry is characterized by competitive pressures to provide enhanced functionality for the same or lower price with each new generation of technology. Terrestrial-based networks are offered by telecommunications carriers and other large companies, many of which have substantially greater financial resources and greater name recognition than ours. As the prices of our products decrease, we will need to sell more products and/or reduce the per-unit costs to improve or maintain our results of operations. The costs of a satellite network may exceed those of a terrestrial-based network or other networks, especially in areas that have experienced significant DSL and cable internet build-out. It may become more difficult for us to compete with terrestrial and other providers as the number of these areas continues to increase and the cost of their network and hardware services continues to decline. Terrestrial networks also have a competitive edge over satellite networks because of lower latency for data transmission.
- Our ESS segment competes against larger, well-established satellite service companies. Because the satellite services industry is relatively mature, our strategy depends largely on our ability to displace current incumbent providers, which often have the benefit of long-term contracts with customers. These long-term contracts and other factors result in relatively high costs for customers to change service providers, making it more difficult for us to displace customers from their current relationships with our competitors. In addition, the supply of satellite capacity available in the market has increased in recent years, which makes it more difficult for us to sell our services in certain markets and to price our capacity at acceptable levels. Competition may continue to cause downward pressure on prices and further reduce the utilization of our capacity, both of which could have an adverse effect on our financial performance. Our ESS segment also competes with both fiber optic cable and terrestrial delivery systems, which may have a cost advantage, particularly in point-to-point applications where such delivery systems have been installed, and with new delivery systems being developed, which may have lower latency and other advantages.

We are dependent upon third-party providers for components, manufacturing, installation services and customer support services, and our results of operations may be materially adversely affected if any of these third-party providers fail to appropriately deliver the contracted goods or services.

We are dependent upon third-party services and products provided to us, including the following:

- **Components.** A limited number of suppliers manufacture, and in some cases a single supplier manufactures, some of the key components required to build our products. These key components may not be continually available and we may not be able to forecast our component requirements sufficiently in advance, which may have a detrimental effect on supply. If we are required to change suppliers for any reason, we would experience a delay in manufacturing our products if another supplier is not able to meet our requirements on a timely basis. In addition, if we are unable to obtain the necessary volumes of components on favorable terms or prices on a timely basis, we may be unable to produce our products at competitive prices and we may be unable to satisfy demand from our customers. Our reliance on a single or limited group of suppliers, particularly foreign suppliers, and our reliance on subcontractors, involves several risks. These risks include a potential inability to obtain an adequate supply of required components, reduced control over pricing, quality and timely delivery of these components, and the potential bankruptcy, lack of liquidity or operational failure of our suppliers. We do not generally maintain long-term agreements with any of our suppliers or subcontractors for our products. An inability to obtain adequate deliveries or any other circumstances requiring us to seek alternative sources of supply could affect our ability to ship our products on a timely basis, which could damage our relationships with current and prospective customers and harm our business, resulting in a loss of market share and reduced revenue and income.
- **Commodity Price Risk.** Fluctuations in pricing of raw materials can affect our product costs. To the extent that component pricing does not decline or increases, whether due to inflation, increased demand, decreased supply, trade policies, tariffs or other factors, we may not be able to pass on the impact of increasing raw materials prices, component prices or labor and other costs, to our customers, and we may not be able to operate profitably. Such changes could have an adverse impact on our product costs.
- **Manufacturing.** While we develop and manufacture prototypes for certain of our products, we use contract manufacturers to produce a significant portion of our hardware. If these contract manufacturers fail to provide

products that meet our specifications in a timely manner, then our customer relationships and revenue may be harmed.

- **Installation and customer support services.** Some of our products and services, such as our North American and international operations, utilize a network of third-party installers to deploy our hardware. In addition, a portion of our customer support and management is provided by third-party call centers. A decline in levels of service or attention to the needs of our customers could adversely affect our reputation, renewal rates and ability to win new business.
- **Other services.** Some of our products rely on third parties to provide services necessary for the operation of functionalities of the products, such as third-party cloud computing services and satellite uplink hosting services. The failure of these services could disrupt the operation of certain functionalities of our products, which could harm our customer relationship and result in a loss of sales. In addition, if the agreements for the provision of these services are terminated or not renewed, we could face difficulties replacing these service providers, which would adversely affect our ability to obtain and retain customers and result in reduced revenue and income.

Our foreign operations and investments expose us to risks and restrictions not present in our domestic operations.

Our sales outside the U.S. accounted for 20.4%, 19.2% and 22.2% of our revenue for the years ended December 31, 2019, 2018 and 2017, respectively. We expect our foreign operations to represent a significant and growing portion of our business. Over the last 10 years, we sold products in over 100 countries and began offering broadband internet services to consumers in several Central and South American countries. Our foreign operations involve varying degrees of risk and uncertainties inherent in doing business abroad. Such risks include:

- **Complications in complying with restrictions on foreign ownership and investment and limitations on repatriation.** We may not be permitted to own our operations in some countries and may have to enter into partnership or joint venture relationships. Many foreign legal regimes and/or our contractual arrangements restrict our repatriation of earnings to the U.S. from our subsidiaries and joint venture entities. Applicable law in such foreign countries may also limit our ability to distribute or access our assets or offer our products and services in certain circumstances. In such event, we will not have access to the cash flow and assets of our subsidiaries and joint ventures.
- **Difficulties in following a variety of laws and regulations related to foreign operations.** Our international operations are subject to the laws and regulations of many different jurisdictions that may differ significantly from U.S. laws and regulations. For example, local privacy or intellectual property laws may hold us responsible for the data that is transmitted over our network by our customers. In addition, we are subject to the Foreign Corrupt Practices Act and similar anti-bribery laws in other jurisdictions that generally prohibit companies and their intermediaries from making improper payments or giving or promising to give anything of value to foreign officials and other individuals for the purpose of obtaining or retaining business or gaining a competitive advantage. Our policies mandate compliance with these laws. However, we operate in many parts of the world that have experienced corruption to some degree. Compliance with these laws may lead to increased operations costs or loss of business opportunities. Violations of these laws could result in fines or other penalties or sanctions, which could have a material adverse impact on our business, financial condition, results of operations or cash flow.
- **Restrictions on space station landing/terrestrial rights.** Satellite market access and landing rights and terrestrial wireless rights are dependent on the national regulations established by foreign governments, including, but not limited to obtaining national authorizations or approvals and meeting other regulatory, coordination and registration requirements for satellites. Because regulatory schemes vary by country, we may be subject to laws or regulations in foreign countries of which we may not be aware. Non-compliance with these requirements may result in the loss of the authorizations and licenses to conduct business in these countries, as well as fines or other financial and non-financial penalties for non-compliance with regulations. If that were to be the case, we could be subject to sanctions, penalties and/or other actions by a foreign government that could materially and adversely affect our ability to operate in that country. There is no assurance that any current regulatory approvals held by us are, or will remain, sufficient in the view of foreign regulatory authorities, or that any additional necessary approvals will be granted on a timely basis or at all, in all jurisdictions in which we wish to operate new satellites or that applicable restrictions in those jurisdictions will not be unduly burdensome. Violations of laws or regulations may result in various sanctions including fines, loss of authorizations and the denial of applications for new authorizations or for the renewal of existing

authorizations, and the failure to obtain or comply with the authorizations and regulations governing our international operations could have a material adverse effect on our ability to generate revenue and our overall competitive position.

- **Financial and legal constraints and obligations.** Operating pursuant to foreign licenses subjects us to certain financial constraints and obligations, including, but not limited to: (a) tax liabilities that may or may not be dependent on revenue; (b) the regulatory requirements associated with maintaining such licenses, which may change over time, are subject to interpretation by foreign courts and regulatory bodies, and may result in additional costs to operate and/or fines, sanctions and penalties being imposed on us or our subsidiaries if found to be violating the terms of such licenses, any or all of which could be material; (c) the burden of creating and maintaining additional entities, branches, facilities and/or staffing in foreign jurisdictions; and (d) legal regulations requiring that we make certain satellite capacity available for "free," which may impact our revenue. In addition, if we need to pursue legal remedies against our customers or our business partners located outside of the U.S., it may be difficult for us to enforce our rights against them.
- **Compliance with applicable export control laws and regulations in the U.S. and other countries.** We must comply with all applicable export control and trade sanctions laws and regulations of the U.S. and other countries. U.S. laws and regulations applicable to us include the Arms Export Control Act, ITAR, EAR and trade sanctions laws and regulations administered by OFAC. The export of certain hardware, technical data and services relating to satellites is regulated by BIS under EAR. Other items are controlled for export by the U.S. Department of State's Directorate of Defense Trade Controls under ITAR. We cannot provide equipment or services to certain countries subject to U.S. trade sanctions unless we first obtain the necessary authorizations from OFAC. Violations of these laws or regulations could result in significant sanctions including fines, more onerous compliance requirements, debarments from export privileges, or loss of authorizations needed to conduct aspects of our international business. A violation of ITAR or other export or trade-related regulations could materially adversely affect our business, financial condition and results of operations.
- **Changes in exchange rates between foreign currencies and the U.S. dollar.** We conduct our business and incur cost in the local currency of a number of the countries in which we operate. Accordingly, our applicable results of operations are reported in the relevant local currency and then translated to U.S. dollars at the applicable currency exchange rate for inclusion in our financial statements. In addition, we sell our products and services and acquire supplies and components from countries that historically have been, and may continue to be, susceptible to recessions, instability or currency devaluation. These fluctuations in currency exchange rates, recessions and currency devaluations have affected, and may in the future affect, revenue, profits and cash earned on international sales.
- **Greater exposure to the possibility of economic instability, the disruption of operations from labor and political disturbances, expropriation or war.** As we conduct operations throughout the world, we could be subject to regional or national economic downturns or instability, acts of terrorism, labor or political disturbances or conflicts of various sizes, including wars. Any of these disruptions could detrimentally affect our sales in the affected region or country or lead to damage to, or expropriation of, our property or danger to our personnel.
- **Competition with large or state-owned enterprises and/or regulations that effectively limit our operations and favor local competitors.** Many of the countries in which we conduct business have traditionally had state-owned or state-granted monopolies on telecommunications services that favor an incumbent service provider. We face competition from these favored and entrenched companies in countries that have not deregulated. The slower pace of deregulation in these countries, including in Asia, Latin America, Middle East, India, Africa and Eastern Europe, has adversely affected, and is likely to continue to adversely affect, the development and growth of our business in these regions.
- **Customer credit risks.** Customer credit risks are exacerbated in foreign operations because there is often little information available about the credit histories of customers in certain of the foreign countries in which we operate.

We may experience loss from some of our customer contracts.

We provide access to our telecommunications networks to customers that use a variety of platforms such as satellite, wireless 4G, 5G, cable, fiber optic and DSL. These customer contracts may require us to provide services at a fixed price for the term of the contract. To facilitate the provision of this access, we may enter into contracts with terrestrial platform providers. Our agreements with these subcontractors may allow for prices to be changed during the term of the contracts. We assume greater financial risk on these customer contracts than on other types of contracts because

if we do not estimate costs accurately and there is an increase in our subcontractors' prices, our net profit may be significantly reduced or there may be a loss on the contracts.

We may experience significant financial losses on our existing investments.

We have entered into certain strategic transactions and investments. These investments involve a high degree of risk and could diminish our financial condition or our ability to fund a share or debt repurchase program, invest capital in our business or return capital to our shareholders. The overall sustained economic uncertainty, as well as financial, operational and other difficulties encountered by certain companies in which we have invested increases the risk that the actual amounts realized in the future on our debt and equity investments will differ significantly from the fair values currently assigned to them. In addition, the companies in which we invest or with whom we partner may not be able to compete or operate effectively or may experience bankruptcy or other liquidity or other financial stress or there may be insufficient demand for the services and products offered by these companies. These investments could also expose us to significant financial losses and may restrict our ability to make other investments or limit alternative uses of our capital resources. If our investments suffer losses, our financial condition could be materially adversely affected.

We may not be able to generate cash to meet our debt service needs or fund our operations.

As of December 31, 2019, our total indebtedness was \$2.4 billion. Our ability to make payments on or to refinance our indebtedness and to fund our operations will depend on our ability to generate cash in the future, which is subject in part to general economic, financial, competitive, legislative, regulatory and other factors that are beyond our control. We may need to raise additional capital in order to fund ongoing operations or to capitalize on business opportunities. We may not be able to generate sufficient cash flow from operations and future borrowings or equity may not be available in amounts sufficient to enable us to service or repay our indebtedness or to fund our operations or other liquidity needs. If we are unable to generate sufficient cash, we may be forced to take actions such as revising or delaying our strategic plans, reducing or delaying capital expenditures and/or the development, design, acquisition and construction of new satellites, selling assets, restructuring or refinancing our debt or seeking additional equity capital. We may not be able to implement any of these actions on satisfactory terms, or at all. The indentures governing our indebtedness limit our ability to dispose of assets and use the proceeds from such dispositions. Therefore, we may not be able to consummate those dispositions on satisfactory terms, or at all, or to use those proceeds in a manner we may otherwise prefer. The Tax Cuts and Jobs Act of 2017 enacted in December 2017 (the "2017 Tax Act") limits the deductibility of interest expense for U.S. federal income tax purposes. While the 2017 Tax Act has reduced our federal income tax obligations, if these limitations or other newly enacted provisions become applicable to us, they could minimize such reductions or otherwise require us to pay additional federal income taxes, which in turn could result in additional liquidity needs.

In addition, conditions in the financial markets could make it difficult for us to access equity or debt markets at acceptable terms or at all. Instability or other conditions in the equity markets could make it difficult for us to raise equity financing without incurring substantial dilution to our existing shareholders. In addition, sustained or increased economic weaknesses or pressures or new economic conditions may limit our ability to generate sufficient internal cash to fund investments, capital expenditures, acquisitions and other strategic transactions and/or the development, design, acquisition and construction of new satellites. We cannot predict with any certainty whether or not we will be impacted by economic conditions. 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.

Covenants in our indentures restrict our business in many ways.

The indentures governing the Hughes Satellite Systems Corporation ("HSS") 7 5/8% Senior Notes due 2021, 5.250% Senior Secured Notes due August 1, 2026 and 6.625% Senior Unsecured Notes due August 1, 2026 contain various covenants, subject to certain exceptions, that limit HSS' ability and/or certain of its subsidiaries' ability to, among other things:

- incur additional debt;
- pay dividends or make distributions on HSS' capital stock or repurchase HSS' capital stock;
- make certain investments;
- create liens or enter into sale and leaseback transactions;

- enter into transactions with affiliates;
- merge or consolidate with another company;
- transfer and sell assets; and
- allow to exist certain restrictions on its or their ability to pay dividends, make distributions, make other payments, or transfer assets.

Failure to comply with these and certain other financial covenants, if not cured or waived, may result in an event of default under the indentures, which could have a material adverse effect on our business, financial condition, results of operations or prospects. If certain events of default occur and are continuing under the respective indenture, the trustee under that indenture or the requisite holders of the notes under that indenture may declare all such notes to be immediately due and payable and, in the case of the indenture governing our secured notes, could proceed against the collateral that secures the secured notes. If certain other events of default occur, the indentures will become immediately due and payable. Certain of our subsidiaries have pledged a significant portion of our assets as collateral to secure the 5.250% Senior Secured Notes due August 1, 2026. If we do not have enough cash to service our debt or fund other liquidity needs, we may be required to take actions such as requesting a waiver from the holders of the notes, reducing or delaying capital expenditures, selling assets, restructuring or refinancing all or part of the existing debt, or seeking additional equity capital. We cannot assure you that any of these remedies can be implemented on commercially reasonable terms or at all, which could result in the trustee declaring the notes to be immediately due and payable and/or foreclosing on the collateral.

To the extent we have available satellite capacity in our ESS segment, our results of operations may be materially adversely affected if we are not able to provide satellite services on this capacity to third parties.

While we are currently evaluating various opportunities to make profitable use of our available satellite capacity (including, but not limited to, supplying satellite capacity for new domestic and international ventures), there can be no assurance that we can successfully develop these business opportunities. If we are unable to utilize our available satellite capacity for providing satellite services to third parties our margins could be negatively impacted, and we may be required to record impairments related to our satellites.

We rely on key personnel and the loss of their services may negatively affect our businesses.

We believe that our future success depends to a significant extent upon the performance of Mr. Charles W. Ergen, our Chairman, and certain other key executives. The loss of Mr. Ergen or of certain other key executives, the ability to effectively provide for the succession of our senior management, or the ability of Mr. Ergen or such other key executives to devote sufficient time and effort to our business could have a material adverse effect on our business, financial condition and results of operations. Although some of our key executives may have agreements relating to their equity compensation that limit their ability to work for or consult with competitors, under certain circumstances, we generally do not have employment agreements with them. To the extent Mr. Ergen is performing services for both DISH Network and us, his attention may be diverted away from our business and therefore adversely affect our business.

A natural disaster could diminish our ability to provide service to our customers.

Natural disasters could damage or destroy our ground stations and/or our other or our vendors' infrastructure, equipment and facilities, resulting in a disruption of service to our customers. We currently have backup systems and technology in place to safeguard our antennas and protect our ground stations during natural disasters such as tornadoes, but the possibility still exists that our ground facilities and/or our other and our vendors' infrastructure, equipment and facilities could be impacted during a major natural disaster. If a future natural disaster impairs or destroys any of our ground facilities and/or our other and our vendors' infrastructure, equipment and facilities, we may be unable to provide service to our customers in the affected area for a period of time which may adversely affect our business and results of operations.

We may have additional tax liabilities and changes in tax laws or regulations may have a material adverse effect on our business, cash flow, financial condition or results of operations.

We are subject to income taxes in the U.S. and foreign jurisdictions. Significant judgments are required in determining our provisions for income taxes. In the course of preparing our tax provisions and returns, we must make calculations where the ultimate tax determination may be uncertain. Our tax returns are subject to examination by the Internal Revenue Service ("IRS"), state, and foreign tax authorities. There can be no assurance as to the outcome of these examinations. If the ultimate determination of taxes owed is for an amount in excess of amounts previously accrued, our operating results, cash flows, and financial condition could be adversely affected.

Additionally, new or modified income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time, which could affect the tax treatment of our domestic and foreign earnings. Any new taxes could adversely affect our domestic and international business operations and our business and financial performance. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted, changed, modified or applied adversely to us. Future tax legislation could have a material impact on the value of our deferred tax assets and could result in increases in our future U.S. tax expense. Furthermore, changes to the taxation of undistributed foreign earnings could change our future intentions regarding reinvestment of such earnings. The foregoing items could have a material adverse effect on our business, cash flow, financial condition or results of operations.

We earn a portion of our operating income from outside the U.S., and any repatriation of funds currently held in foreign jurisdictions may result in higher effective tax rates for us. In addition, changes to U.S. tax laws have significantly impacted how U.S. multinational corporations are taxed on foreign earnings. Numerous countries are evaluating their existing tax laws due in part, to recommendations made by the Organization for Economic Co-operation and Development's Base Erosion and Profit Shifting project. Although we cannot predict whether or in what form any legislation based on such proposals may be adopted by the countries in which we do business, future tax reform based on such proposals or otherwise may increase the amount of taxes we pay and adversely affect our operating results and cash flows.

Developments with respect to trade policies, trade agreements, tariffs and related government regulations could continue to increase our costs and impact the supply of certain products we import, decrease demand for certain of our products and have a material adverse impact on our business, financial condition and results of operations.

We source certain parts, components and items used in our products from manufacturers located outside of the U.S. and we sell certain of our products to customers located outside of the U.S. Concerns have been raised about certain countries potentially engaging in unfair trade practices and, as a result, tariffs have been increased on certain goods imported into the U.S. from those countries, including China and other countries from which we import components or raw materials, and there is the possibility of additional tariff increases. The imposition of tariffs on imported products by the U.S. has triggered actions from certain foreign governments, specifically China, resulting in a "trade war". This trade war has materially increased the cost of certain products we import, impacted the supply of such products, and may require us to change our manufacturers. Although, the U.S. and China have agreed to a temporary trade deal, a potential long-term trade deal remains subject to ongoing trade talks while many of the tariffs remain in place. The outcome of the trade war, and any other governmental action related to tariffs, government regulations, or international trade agreements or policies could exacerbate adverse impacts incurred thus far and/or decrease demand for certain of our products, any or all of which could have a material adverse impact on our business, financial condition and results of operations.

RISKS RELATED TO OUR SATELLITES

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

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

Although we work closely with the satellite manufacturers to determine and eliminate the cause of anomalies in new satellites and provide for redundancies of many critical components in the satellites, we may not be able to prevent anomalies or outages from occurring and may experience anomalies and outages in the future, whether of the types described above or arising from the failure of other systems or components. The failure to perform of any of our manufacturers which provide in-orbit anomaly support for our satellites could result in our inability to determine, eliminate or manage anomalies for our satellites. Even if alternate in-orbit anomaly support services are available, we may have difficulty identifying them in a timely manner or we may incur significant additional expense in changing suppliers. Space Systems/Loral ("SSL"), a subsidiary of Maxar Technologies Inc. ("Maxar"), provides in-orbit anomaly support for several of our satellites. A decision by Maxar to discontinue, wind down or otherwise significantly modify its geostationary communications satellite business could have a material adverse impact on the operation of several of our satellites, including our ability to remedy any anomalies or outages.

Any single anomaly or outage or series of anomalies or outages could materially and adversely affect our ability to utilize the satellite, our operations, services and revenue as well as our relationships with current customers and our ability to attract new customers. In particular, future anomalies or outages may result in, among other things, the loss of individual transponders/beams and/or functional solar array circuits on a satellite, a group of transponders/beams on that satellite or the entire satellite, depending on the nature of the anomaly or outage. Anomalies or outages may also reduce the expected capacity, commercial operation and/or useful life of a satellite, thereby reducing the revenue that could be generated by that satellite, or create additional expenses due to the need to provide replacement or back-up satellites or satellite capacity earlier than planned and could have a material adverse effect on our business, financial condition and results of operations.

The loss of a satellite or other satellite malfunctions or anomalies or outages could have a material adverse effect on our financial performance, which we may not be able to mitigate by using available capacity on other satellites. There can be no assurance that we can recover critical transmission capacity in the event one or more of our in-orbit satellites were to fail. In addition, the loss of a satellite or other satellite malfunctions or anomalies or outages could affect our ability to comply with FCC and other regulatory obligations and our ability to fund the construction or acquisition of replacement satellites for our in-orbit fleet in a timely fashion, or at all. There can be no assurance that anomalies or outages will not impact the remaining useful life and/or the commercial operation of any of the satellites in our fleet. In addition, there can be no assurance that we can recover critical transmission capacity in the event one or more of our in-orbit satellites were to fail.

Meteoroid events pose a potential threat to all in-orbit satellites. The probability that meteoroids will damage those satellites increases significantly when the Earth passes through the particulate stream left behind by comets. Occasionally, increased solar activity also poses a potential threat to all in-orbit satellites.

Some decommissioned satellites are in uncontrolled orbits, which pass through the geostationary belt at various points and present hazards to operational satellites, including our satellites. We may be required to perform maneuvers to avoid collisions and these maneuvers may prove unsuccessful or could reduce the useful life of the satellite through the expenditure of fuel to perform these maneuvers. The loss, damage or destruction of any of our satellites as a result of an electrostatic storm, collision with space debris, malfunction or other event could have a material adverse effect on our business, financial condition and results of operations.

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

Our satellites have minimum design lives of 15 years, but could fail or suffer reduced capacity before then.

Generally, the minimum design life of each of our satellites is 15 years. We can provide no assurance, however, as to the actual operational lives of our satellites, which may be shorter or longer than their design lives. Our ability to earn revenue depends on the continued operation of our satellites, each of which has a limited useful life. Several factors affect the useful lives of the satellites, including, among other things, the quality of their design and construction, the durability of their component parts, the ability to continue to maintain proper orbit and control over the satellite's functions, the efficiency of the launch vehicle used, and the remaining on-board fuel following orbit insertion. In addition, continued improvements in satellite technology may make obsolete our existing satellites, or any satellites we may acquire in the future, prior to the end of their design lives.

In the event of a failure or loss of any of our satellites, we may relocate another satellite and use it as a replacement for the failed or lost satellite, which could have a material adverse effect on our business, financial condition and results of operations. Additionally, such relocation would require governmental approval. We cannot be certain that we could obtain such governmental approval. In addition, we cannot guarantee that another satellite will be available for use as a replacement for a failed or lost satellite, or that such relocation can be accomplished without a substantial utilization of fuel. Any such utilization of fuel would reduce the operational life of the replacement satellite.

Our satellites under construction are subject to risks related to construction, technology, regulations and launch that could limit our ability to utilize these satellites and adversely affect our business and financial condition.

Satellite construction and launch are subject to significant risks, including delays, anomalies, launch failure and incorrect orbital placement. The technologies in our satellite designs are very complex and difficulties in constructing our designs could result in delays in the deployment of our satellites or increased or unanticipated costs. There also can be no assurance that the technologies in our existing satellites or in new satellites that we design, acquire and build will work as we expect and/or will not become obsolete, that we will realize any or all of the anticipated benefits of our satellite designs or our new satellites, or that we will obtain all regulatory approvals required to operate our new or acquired satellites. In addition, certain launch vehicles that may be used by us have either unproven track records or have experienced launch failures in the past. The risks of launch delay, launch anomalies and launch failure are usually greater when the launch vehicle does not have a track record of previous successful flights. Launch anomalies and failures can result in significant delays in the deployment of satellites because of the need both to construct replacement satellites, which can take significant amounts of time, and to obtain other launch opportunities. Such significant delays could materially and adversely affect our business, expenses and results of operations, our ability to meet regulatory or contractual required milestones, the availability and our use of other or replacement satellite resources and our ability to provide services to customers as capacity becomes full on existing satellites. In addition, significant delays in a satellite program could give customers who have purchased or reserved capacity on that satellite a right to terminate their service contracts relating to the satellite. We may not be able to accommodate affected customers on other satellites until a replacement satellite is available. A customer's termination of its service contracts with us as a result of a launch delay or failure would reduce our contracted backlog and our ability to generate revenue. One of our potential launch services providers is a Russian Federation state-owned company. Certain ongoing political events have created uncertainty as to the stability of U.S. and Russian Federation relations. This could add to risks relative to scheduling uncertainties and timing. If a launch delay, anomaly or failure were to occur, it could result in the revocation of the applicable license to operate the satellite, undermine our ability to implement our business strategy or develop or pursue existing or future business opportunities with applicable licenses and otherwise have a material adverse effect on our business, expenses, assets, revenue, results of operations and ability to fund future satellite procurement and launch opportunities. Historically, we have not always carried launch insurance for the launch of our satellites and the occurrence of launch anomalies and failures, whether on our satellites or those of others, may significantly reduce our ability to place launch insurance for our satellites or make launch insurance uneconomical.

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

Satellite transmissions and the use of frequencies often are dependent on coordination with other satellite systems and telecommunications providers operated by U.S. or foreign entities, including governments, and it can be difficult to determine the outcome of these coordination agreements with these other entities and governments. The impact of a coordination agreement may result in the loss of rights to the use of certain frequencies or access to certain markets. The significance of such a loss would vary and it can therefore be difficult to determine which portion of our revenue will be impacted.

In the event the international coordination process that is triggered by ITU filings under applicable rules is not successfully completed, or that the requests for modification of the broadcast satellite services plan regarding the allocation of orbital locations and frequencies are not granted by the ITU, we will have to operate the applicable satellite(s) on a non-interference basis, which could have an adverse impact on our business operations. If we cannot do so, we may have to cease operating such satellite(s) at the affected orbital locations, which could have a material adverse effect on our business, results of operations and financial position.

Furthermore, the satellite coordination process is conducted under the guidance of the ITU radio regulations and the national regulations of the satellites involved in the coordination process. These rules and regulations could be amended and could therefore materially adversely affect our business, financial condition and results of operations.

We may face interference from other services sharing satellite spectrum.

The FCC and other regulators have adopted rules or may adopt rules in the future that allow non-geostationary orbit satellite services and/or fixed and mobile terrestrial systems to operate on a co-primary basis in the same frequency band as MSS and FSS. In addition, the FCC and other regulators may make changes that could affect the use of spectrum for MSS and FSS. Despite regulatory provisions designed to protect MSS and FSS operations from harmful interference, there can be no assurance that operations by other satellites or terrestrial communication services in the MSS and FSS bands will not interfere with our MSS and FSS operations and adversely affect our business.

Our dependence on outside contractors could result in delays related to the design, manufacture and launch of our new satellites, which could in turn adversely affect our operating results.

There are a limited number of manufacturers that are able to design and build satellites according to the technical specifications and standards of quality we require, including Airbus Defence and Space, Boeing Satellite Systems, Lockheed Martin, SSL and Thales Alenia Space. There are also a limited number of launch service providers that are able to launch such satellites, including International Launch Services, Arianespace, Lockheed Martin Commercial Launch Services and Space Exploration. The failure to perform of any of our manufacturers or launch service providers could increase the cost and result in the delay of the design, construction or launch of our satellites. Even if alternate suppliers for such services are available, we may have difficulty identifying them in a timely manner or we may incur significant additional expense in changing suppliers, and this could result in difficulties or delays in the design, construction or launch of our satellites. For example, if SSL, the manufacturer of our EchoStar XXIV satellite, or any potential successor fails to meet or is delayed in meeting its contractual obligations regarding the timely manufacture and delivery of the satellite for any reason, including if Maxar decides to discontinue, wind down or otherwise significantly modify its geostationary communications satellite business, such failure could have a material adverse effect on completing the manufacture of the EchoStar XXIV satellite and, like any other delays in the design, construction or launch of our other satellites, could have a material adverse impact on our business operations, future revenues, financial position and prospects.

RISKS RELATED TO OUR PRODUCTS AND TECHNOLOGY

If we are unable to properly respond to technological changes, our business could be significantly harmed.

Our business and the markets in which we operate are characterized by rapid technological changes, evolving industry standards and frequent product and service introductions and enhancements. If we or our suppliers are unable to properly respond to or keep pace with technological developments, fail to develop new technologies, or if our competitors obtain or develop proprietary technologies that are perceived by the market as being superior to ours, our existing products and services may become obsolete and demand for our products and services may decline. Even if we keep up with technological innovation, we may not meet the demands of the markets we serve. Furthermore, after we have incurred substantial research and development costs, one or more of the technologies under our development, or under development by one or more of our strategic partners, could become obsolete prior to its introduction. If we are unable to respond to or keep pace with technological advances on a cost-effective and timely basis, or if our products, applications or services are not accepted by the market, then our business, financial condition and results of operations could be adversely affected.

Our response to technological developments depends, to a significant degree, on the work of technically skilled employees. Competition for the services of such employees has become more intense as demand for these types of employees grows. We compete with other companies for these employees and although we strive to attract and retain these employees, we may not succeed in these respects. Additionally, if we were to lose certain key technically skilled employees, the loss of knowledge and intellectual capital might have an adverse impact on business, financial condition and results of operations.

We have made and will continue to make significant investments in research, development, and marketing for new products, services, satellites and related technologies, as well as entry into new business areas. Investments in new technologies, satellites and business areas are inherently speculative and commercial success thereof depends on numerous factors including innovativeness, quality of service and support, and effectiveness of sales and marketing. We may not achieve revenue or profitability from such investments for a number of years, if at all. Moreover, even if such products, services, satellites, technologies and business areas become profitable, their operating margins may be minimal.

Our future growth depends on growing demand for advanced technologies.

Future demand and effective delivery for our products will depend significantly on the growing demand for advanced technologies, such as broadband internet connectivity. If the deployment of, or demand for, advanced technologies is not as widespread or as rapid as we or our customers expect, our revenue growth will be negatively impacted.

Our business depends on certain intellectual property rights and on not infringing the intellectual property rights of others. The loss of our intellectual property rights or our infringement of the intellectual property rights of others could have a significant adverse impact on our business.

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 by third parties of intellectual property infringement 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 businesses as currently conducted or as we plan to conduct it, which could require us to change our business practices or limit our ability to compete effectively or could otherwise have an adverse effect on our business, financial condition, results of operations or prospects. Even if any such challenges or claims prove to be without merit, they can be time-consuming and costly to defend and may divert management's attention and resources away from our business.

Moreover, due to the rapid pace of technological change, we rely in part on technologies developed or licensed by third parties, and if we are unable to obtain or continue to obtain licenses or other required intellectual property rights from these third parties on reasonable terms, our business, financial position and results of operations could be adversely affected. Technology licensed from third parties or developed by us may have undetected errors that impair the functionality or prevent the successful integration of our products or services. As a result of any such changes or loss, we may need to incur additional development costs to ensure continued performance of our products or suffer delays until replacement technology, if available, can be obtained and integrated.

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 our products may contain technologies provided to us by these third parties. We may have little or no ability to determine in advance whether any such technology infringes the intellectual property rights of others, or whether such vendors have obtained or continue to obtain the appropriate licenses or other intellectual property rights to use such technology. Our vendors, contractors and suppliers may not be required to indemnify us in the event that 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 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.

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 both in and out of the ordinary course of our business. 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 related to those that we offer. In general, if a court determines that one or more of our products or services infringes valid 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 at a material cost, to pay damages or to redesign those products or services in such a way as to avoid infringement. If those intellectual property rights are held by a competitor, we may be unable to license the necessary intellectual property rights at any price, which could adversely affect our competitive position.

We may not be aware of all patents and other intellectual property rights that our products and services may potentially infringe. In addition, patent applications in the U.S. and foreign countries are confidential until the appropriate patent governing body 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 patent claim is valid and whether a particular product infringes a valid patent claim 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 licenses with respect to intellectual property rights held by others and 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 from time to time may defend patent infringement actions and may from time to time assert our own actions against parties we suspect of infringing our patents and trademarks. We cannot be certain the courts will conclude these companies do not own the rights they claim, that these rights are not valid, or that our products and services do not infringe on these rights. We also cannot be certain that we will 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 and services to avoid infringement. The legal costs associated with defending patent suits and pursuing patent claims against others may be borne by us if we are not awarded reimbursement through the legal process. See further discussion under Item 1. Business — Patents and Trademarks and Item 3. Legal Proceedings of this Form 10-K.

Litigation or governmental proceedings could result in material adverse consequences, including judgments or settlements.

We are involved in lawsuits, regulatory inquiries, audits, consumer claims and governmental and other legal proceedings arising from our business, including new products and services that we may offer. Some of these proceedings may raise difficult and complicated factual and legal issues and can be subject to uncertainties and complexities. The timing of the final resolutions to lawsuits, regulatory inquiries, audits, and governmental and other legal proceedings is typically uncertain. Additionally, the possible outcomes of, or resolutions to, these proceedings could include adverse judgments, settlements, injunctions or liabilities, any of which could require substantial payments or have other adverse impacts on our revenue, results of operations or cash flow.

If the encryption and related security technology used in our products is compromised, sales of our products may decline.

Our customers use encryption and related security technology obtained from us or our suppliers in the products that they purchase from us to protect their data and products from unauthorized access to the features or functionalities of such products. Such encryption and related security technology has been compromised in the past and may be compromised in the future even though we continue to respond with significant investment in security measures, such as updates in security software, that are intended to make data theft more difficult. It has been our prior experience that security measures may only be effective for short periods of time or not at all. We cannot ensure that we will be successful in reducing or controlling theft of our customers' data. As a result, sales of our products may decline, our reputation and customer relationship could be damaged and we may incur additional costs or financial liability in the future if security of our customers' system is compromised.

We may be exposed to financial and reputational damage to our business by cybersecurity incidents.

We and third parties with whom we work face a constantly developing landscape of cybersecurity threats in which hackers and other parties use a complex assortment of techniques and methods to execute cyber-attacks, including but not limited to the use of stolen access credentials, social engineering, malware, ransomware, phishing, insider threats (which may be malicious or erroneous), structured query language injection attacks and distributed denial-of-service attacks. Cybersecurity incidents such as these have increased significantly in quantity and severity and are expected to continue to increase. Additionally, the risk of cyber-attacks and compromises will likely increase as we continue to expand our business into other areas of the world outside of North America, some of which are still developing their cybersecurity infrastructure maturity. Should we be affected by a material cyber-related incident, we may incur substantial costs and suffer other negative consequences, which may include:

- significant remediation costs, such as liability for stolen assets or information, repairs of system damage and/or incentives to customers or business partners in an effort to maintain relationships after an attack;
- significant increased cybersecurity protection costs, which may include the costs of making organizational changes, deploying additional personnel and protection technologies, training employees and engaging third party experts and consultants;
- material increased liability due to financial or other harm inflicted on our partners;
- loss of material revenues resulting from attacks on our satellites or technology, the unauthorized use of proprietary information or the failure to retain or attract customers following an attack;

- significant litigation and legal risks, including regulatory actions by state, federal and international regulators; and
- loss of or damage to reputation.

Our business is subject to varying degrees of regulation that include programs designed to review our protections against cybersecurity threats and risks. If it is determined that our systems do not reasonably protect our partners' assets and data and/or that we have violated these regulations, we could be subject to enforcement activity and sanctions.

We regularly review and revise our internal cybersecurity policies and procedures, invest in and maintain internal and external cybersecurity teams and systems and software to detect, deter, prevent and/or mitigate cyber-attacks and review, modify and supplement our defenses through the use of various services, programs and outside vendors. It is impossible, however, for us to know when or if any particular cyber-attack may arise or the impact on our business and operations of any such incident. We expect to continue to incur increasing costs in preparing our infrastructure and maintaining it to resist any such attacks. There can be no assurance that we can successfully detect, deter, prevent or mitigate the effects of cyber-attacks, any of which could have a material adverse effect on our business, costs, operations, prospects, results of operation or financial position. Furthermore, the amount and scope of insurance that we maintain against losses resulting from these events may not be sufficient to compensate us adequately for any disruptions to our business or otherwise cover our losses, including reputational harm and negative publicity as well as any litigation liability.

Compliance with data privacy laws may be costly, and non-compliance with such laws may result in significant liability.

The personal information and data that we process and store is increasingly subject to the data security and data privacy laws of many jurisdictions. These laws may conflict with one another, and many of them are subject to frequent modification and differing interpretations. The laws impose a significant compliance burden and complying with them has required us to change our business practices or the functionality of our products and services. Although we have made efforts to design our policies, procedures, and systems to comply with the current requirements of applicable state, federal, and foreign laws, changes to applicable laws and regulations and the implementation of new laws and regulations in this area could subject us to additional regulation and oversight, any of which could significantly increase our operating costs, restrict our business operations and result in changes that are adverse to our customers. In addition, violations of these laws can result in significant fines, penalties, claims by regulators or other third parties, and damage to our brand and business.

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

The products and the networks we deploy are highly complex, and some may contain defects when first introduced or when new versions or enhancements are released, despite testing and our quality control procedures. For example, our products may contain software "bugs" that can unexpectedly interfere with their operation. Defects may also occur in components and products that we purchase from third parties. In addition, many of our products and network services are designed to interface with our customers' existing networks, each of which has different specifications and utilize multiple protocol standards. Our products and services must interoperate with the other products and services within our customers' networks, as well as with future products and services that might be added to these networks, to meet our customers' requirements. There can be no assurance that we will be able to detect and fix all defects in the products and networks we sell. The occurrence of any defects, errors or failures in our products or network services could result in (i) additional costs to correct such defects; (ii) cancellation of orders and lost revenue; (iii) a reduction in revenue backlog; (iv) product returns or recalls; (v) diversion of our resources; (vi) the issuance of credits to customers and other losses to us, our customers or end-users; (vii) liability for harm to persons and property caused by defects in or failures of our products or services; and (viii) harm to our reputation if we fail to detect or effectively address such issues through design, testing or warranty repairs. Any of these occurrences could also result in the loss of or delay in market acceptance of our products and services and loss of sales, which would harm our reputation and our business and materially adversely affect our revenue and profitability.

RISKS RELATED TO THE REGULATION OF OUR BUSINESS

Our business is subject to risks of adverse government regulation.

Our business is subject to varying degrees of regulation in the U.S. by the FCC, and other federal, state and local entities, and in foreign countries by similar entities and internationally by the ITU. These regulations are subject to the administrative and political process and do change, for political and other reasons, from time to time and may limit or constrain and/or have other adverse effects on and implications for our business and operations. The U.S. and foreign countries in which we currently, or may in the future, operate may not authorize us access to all of the spectrum that we need to provide service in a particular country. Moreover, the U.S. and a substantial number of foreign countries in which we have, or may in the future make, an investment, regulate, in varying degrees, the ownership of satellites and other telecommunication facilities/networks and foreign investment in telecommunications companies. Violations of laws or regulations may result in various sanctions including fines, loss of authorizations and the denial of applications for new authorizations or for the renewal of existing authorizations. Further material changes in law and regulatory requirements may also occur, and there can be no assurance that our business and the business of our subsidiaries and affiliates will not be adversely affected by future legislation, new regulation or deregulation. The failure to obtain or comply with the authorizations and regulations governing our operations could have a material adverse effect on our ability to generate revenue or pursue our business strategies and our overall competitive position and could result in our suffering serious harm to our reputation.

Our business depends on regulatory authorizations issued by the FCC and state and foreign regulators that can expire, be revoked or modified, and applications for licenses and other authorizations that may not be granted.

Generally all satellite, earth stations and other licenses granted by the FCC and most other countries are subject to expiration unless renewed by the regulatory agency. Our satellite licenses are currently set to expire at various times. In addition, we occasionally receive special temporary authorizations that are granted for limited periods of time (e.g., 180 days or less) and subject to possible renewal. Generally, our licenses and special temporary authorizations have been renewed on a routine basis, but there can be no assurance that this will continue. In addition, we must obtain new licenses from the FCC and other countries' regulators for the operation of new satellites that we may build and/or acquire. There can be no assurance that the FCC or other regulators will continue granting applications for new licenses or for the renewal of existing ones. If the FCC or other regulators were to cancel, revoke, suspend, or fail to renew any of our licenses or authorizations, fail to grant or impose conditions on our applications for FCC or other licenses, it could have a material adverse effect on our business, financial condition and results of operations. Specifically, loss of a frequency authorization or limitations on our ability to use the frequencies we currently use and/or intend to use in the future would reduce the amount of spectrum available to us, potentially reducing the amount of services we provide to our customers. The significance of such a loss of authorizations would vary based upon, among other things, the orbital location, the frequency band and the availability of replacement spectrum. In addition, the legislative and executive branches of the U.S. government and foreign governments often consider legislation and regulatory requirements that could affect us, as could the actions that the FCC and foreign regulatory bodies take. We cannot predict the outcomes of these legislative or regulatory proceedings or their effect on our business.

In addition, third parties have or may oppose some of our license applications and pending and future requests for extensions, modifications, waivers and approvals of our licenses. Even if we have fully complied with all of the required reporting, filing and other requirements in connection with our authorizations, it is possible a regulator could decline to grant certain of our applications or requests for authority, or could revoke, terminate, condition or decline to modify, extend or renew certain of our authorizations or licenses.

Further, we rely on subcontractors to provide us with certain goods and services that may require their compliance with our licenses and other authorizations. In the event that their provision of these goods and services are not in compliance with such licenses and other authorizations, we may be subject to fines or other penalties and/or the applicable regulator may cancel, revoke, suspend, or fail to renew any of our licenses or authorizations.

We may face difficulties in accurately assessing and collecting contributions towards the USF.

Because our customer contracts often include both telecommunications services, which create obligations to contribute to the USF, and other goods and services, which do not, it can be difficult to determine what portion of our revenue forms the basis for our required contribution to the USF and the amount that we can recover from our customers. If the FCC, which oversees the USF, or a court or other governmental entity were to determine that we computed our USF contribution obligation incorrectly or passed the wrong amount onto our customers, we could become subject to additional assessments, liabilities, or other financial penalties. In addition, the FCC is considering substantial changes to its USF contribution and distribution rules. These changes could impact our future contribution obligations and those of third parties that provide communication services to our business. Any such change to the USF contribution rules could adversely affect our costs of providing service to our customers. In addition, changes to the USF distribution rules could intensify the competition we face by offering subsidies to competing firms and/or technologies.

Restrictions on immigration or increased enforcement of immigration laws could limit our access to qualified and skilled professionals, increase our cost of doing business or otherwise disrupt our operations.

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

RISKS RELATING TO THE BSS TRANSACTION

Certain of our directors and executive officers have interests in the BSS Transaction that may be different from, or in addition to, those of our other stockholders.

Certain of our directors and executive officers have interests in the BSS Transaction that may be different from, or in addition to, the interests of our stockholders generally. Our directors and executive officers who own shares of our common stock participated in the Distribution and the Merger on the same terms as our other stockholders. Additionally, Mr. Ergen, director and Chairman of both us and DISH, serves as a director and executive officer of BSS Corp. following the consummation of the BSS Transaction. The EchoStar parties that approved the BSS Transaction, as described below, were aware of and considered these interests, among other things, in deciding to approve the terms of the Master Transaction Agreement and the BSS Transaction.

The BSS Transaction was approved, in accordance with our longstanding related party transaction policy, by (i) our independent management, (ii) our non-interlocking directors (i.e., directors who are not also directors or employees of DISH Network), with our director, Mr. R. Stanton Dodge, recusing himself to avoid the appearance of any potential conflict resulting from his prior employment with DISH Network and our director, Mr. Anthony M. Federico, recusing himself to avoid the appearance of any potential conflict resulting from his service on DISH's special litigation committee, (iii) our audit committee, with Mr. Federico recusing himself and, after all such approvals were obtained (iv) our board of directors, with, our chairman, Mr. Ergen, recusing himself. Applicable portions of the BSS Transaction were also approved by HSS' board of directors.

If the Distribution and the Merger do not qualify as a tax-free distribution and merger under the Internal Revenue Code of 1986, as amended (the "Code"), then we and/or our stockholders may be required to pay substantial U.S. federal income taxes and under certain circumstances we may have indemnification obligations to DISH Network.

The parties to the BSS Transaction received a tax opinion from their respective counsels as to the tax-free nature of the transactions. They did not obtain a private letter ruling from the IRS with respect to the Distribution and the Merger and instead are relying solely on their respective tax opinions for comfort that the Distribution and the Merger qualify for tax-free treatment for U.S. federal income tax purposes under the Code.

The tax opinions were based on, among other things, certain undertakings made by us and DISH Network, as well as certain representations and assumptions as to factual matters made by us, DISH Network, and Mr. and Mrs. Ergen. The failure of any factual representation or assumption to be true, correct and complete, or any undertaking to be fully

complied with, could affect the validity of the tax opinions. An opinion of counsel represents counsel's best legal judgment, is not binding on the IRS or the courts, and the IRS or the courts may not agree with the conclusions set forth in the tax opinions. In addition, the tax opinions were based on then-current law, and cannot be relied upon if current law changes with retroactive effect.

If the Distribution does not qualify as a tax-free distribution under Section 355 of the Code, then the Distribution would be taxable to our stockholders, we would recognize a substantial gain on the Distribution, we and our stockholders could incur significant U.S. federal income tax liabilities, and we could be required to indemnify DISH Network for the tax on such gain if the failure of the Distribution to so qualify is the result of certain actions or misrepresentations by us, but we will not be required to indemnify any of our stockholders. In the event we are required to indemnify DISH Network for taxes incurred in connection with the BSS Transaction, the indemnification obligation could have a material adverse effect on our business, financial conditions, results or operations and cash flow.

Even if the Distribution otherwise qualifies as a tax-free distribution, the Distribution would be taxable to us (but not to our stockholders) pursuant to Section 355(e) of the Code if one or more persons acquire a 50% or greater interest (measured by vote or value) in our or BSS Corp.'s stock, directly or indirectly (including through acquisitions of the BSS Common Stock or DISH Common Stock after the completion of the BSS Transaction), as part of a plan or series of related transactions that includes the Distribution. If there is a change of control of DISH Network or BSS Corp. after the completion of the BSS Transaction or a transfer of stock or assets of DISH Network or BSS Corp. that results in the Distribution being taxable to us under Section 355(e) of the Code, DISH Network would be required to indemnify us (but not our stockholders) for such taxes only if DISH Network took an action or knowingly facilitated, consented to or assisted with an action by a DISH shareholder that caused the Distribution to fail to qualify as a tax-free distribution. If the Merger were taxable, our stockholders would be considered to have made a taxable sale of their BSS Common Stock to DISH Network and, consequently, our stockholders would recognize taxable gain or loss on their receipt of DISH Common Stock in the Merger. In addition, the Merger being taxable could cause the Distribution to fail to qualify as a tax-free distribution.

A putative class action lawsuit relating to the BSS Transaction has been filed against us, DISH Network, Mr. Ergen and certain of our officers and other lawsuits related to the BSS Transaction may be filed against us, DISH Network and other persons which could result in substantial costs.

On July 2, 2019, a complaint was filed by purported EchoStar stockholders. See Note 20 in our Accompanying Consolidated Financial Statements for more information about litigation related to the BSS Transaction that has been commenced prior to the date of this report. There can be no assurance that additional complaints will not be filed with respect to the BSS Transaction.

Even if this lawsuit and any others that may be filed are without merit, defending against these claims can result in substantial costs and divert management time and resources. An adverse judgment could result in monetary damages, which could have a negative impact on our liquidity and financial condition.

Our ability to operate and control our satellites is subject to risks related to DISH Network's operation of the BSS Business.

In connection with the BSS Transaction, we transferred our satellite operation centers, which are used to monitor and control our satellites, to DISH Network. DISH Network may not be able to successfully or profitably operate, maintain and manage the BSS Business and its employees, including the operations and employees of the satellite operations centers. DISH Network may not be able to maintain uniform standards, controls, procedures and policies or comply with regulations with respect to the satellite operations centers, and this may lead to operational failures or inefficiencies. A failure or inefficiency at any of the satellite operations centers could cause a significant loss of service for our customers or might cause the transmission of incorrect commands to the affected satellite(s), which could lead to a temporary or permanent degradation in satellite performance or to the loss of one or more of our satellites. Any such failure could have a material adverse impact on our business, financial condition, and results of operations.

We may be more susceptible to adverse events as a result of the BSS Transaction.

We have divested the BSS Business and our business will be subject to increased concentration of risks that affect our retained businesses. We are now a smaller, less diversified and more narrowly focused business, which makes us more vulnerable to changing market and economic conditions. Operating as a smaller entity may reduce or eliminate some of the benefits and synergies which previously existed across our business platforms, including our operating

diversity, purchasing and borrowing leverage, available capital, and relationships and opportunities to pursue integrated strategies within our businesses and attract, retain and motivate key employees. In addition, as a smaller company, our ability to absorb costs may be negatively impacted, including the significant cost of the BSS Transaction and/or litigations or other adverse rulings or proceedings, and we may be unable to obtain financing, goods or services at prices or on terms as favorable as those obtained prior to the BSS Transaction. Any of these factors could have a material adverse effect on our business, financial condition, results of operations, cash flows, business prospects and the trading price of our common stock.

We might not be able to engage in certain strategic transactions because we have agreed to certain restrictions to comply with U.S. federal income tax requirements for a tax-free spin-off.

To preserve the intended tax treatment of the Distribution, we have agreed to comply with certain restrictions under current U.S. federal income tax laws for spin-offs, including: (i) refraining from engaging in certain transactions that would result in a fifty percent or greater change by vote or by value in our stock ownership; (ii) continuing to own and manage our historic business; and (iii) limiting sales or redemptions of our common stock. These restrictions could result in our inability to respond effectively to competitive pressures, industry developments and future opportunities, prevent us from pursuing otherwise attractive business opportunities and/or harm our business, financial results and operations. If these restrictions, among others, are not followed, the Distribution could be taxable to us and possibly our stockholders. In addition, we could be required to indemnify DISH Network for any tax liability incurred by DISH Network as a result of our non-compliance with these restrictions, and such indemnity obligations could be substantial.

OTHER RISKS

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

Charles W. Ergen, our Chairman, beneficially owns approximately 51% of our total equity securities (assuming conversion of only the Class B common stock beneficially owned by Mr. Ergen into Class A common stock and giving effect to the exercise of options held by Mr. Ergen that are either currently exercisable as of, or may become exercisable within 60 days after, February 10, 2020) and beneficially owns approximately 91% of the total voting power of all classes of shares (assuming no conversion of any Class B common stock and giving effect to the exercise of options held by Mr. Ergen that are either currently exercisable as of, or may become exercisable within 60 days after, February 10, 2020). Through his beneficial ownership of our equity securities, Mr. Ergen has the ability to elect a majority of our directors and to control all other matters requiring the approval of our stockholders. As a result of Mr. Ergen's voting power, we are a "controlled company" as defined in the NASDAQ listing rules and, therefore, are not subject to NASDAQ requirements that would otherwise require us to have (i) a majority of independent directors; (ii) a nominating committee composed solely of independent directors; (iii) compensation of our executive officers determined by a majority of the independent directors or a compensation committee composed solely of independent directors; (iv) a compensation committee charter which provides the compensation committee with the authority and funding to retain compensation consultants and other advisors; and/or (v) director nominees selected, or recommended for the Board's selection, either by a majority of the independent directors or a nominating committee composed solely of independent directors.

We have potential conflicts of interest with DISH Network due to our common ownership.

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

- **Cross directorships and stock ownership.** Charles W. Ergen serves as the Chairman of our and DISH's board of directors, is employed by both companies and has fiduciary duties to our and DISH's shareholders. Mr. Ergen may have actual or apparent conflicts of interest with respect to matters involving or affecting each company. For example, there is potential for a conflict of interest when we or DISH Network look at acquisitions and other corporate opportunities that may be suitable for both companies. In addition, some of our directors and officers, including Mr. Ergen, own DISH stock and options to purchase DISH stock, certain of which they acquired or were granted prior to our spin-off from DISH in 2008 (the "Spin-off"). 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 our company and DISH Network.

- **Intercompany agreements with DISH Network.** We have entered into various agreements with DISH Network. Pursuant to certain agreements, we obtain certain products, services and rights from DISH Network; DISH Network obtains certain products, services and rights from us; and we and DISH Network indemnify each other against certain liabilities arising from our respective businesses. Generally, the amounts paid for products and services provided under the agreements are based on cost plus a fixed margin, which varies depending on the nature of the products and services provided. Certain other intercompany agreements cover matters such as tax sharing and our responsibility for certain liabilities previously undertaken by DISH Network for certain of our businesses. We have also entered into certain commercial agreements with DISH Network. The terms of certain of these agreements were established while we were a wholly-owned subsidiary of DISH and were not the result of arm's length negotiations. The allocation of assets, liabilities, rights, indemnifications and other obligations between DISH Network and us under certain agreements we have entered into with DISH Network may not necessarily reflect what two unaffiliated parties might have agreed to. Had these agreements been negotiated with unaffiliated third parties, their terms may have been more or less favorable to us. In addition, DISH Network or its affiliates will likely continue to enter into transactions, including joint ventures, acquisitions, dispositions and other strategic initiatives and transactions, with us or other affiliates. Although the terms of any such transactions will be established based upon negotiations between us and DISH Network and, when appropriate, subject to approval by a committee of 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 in negotiations between unaffiliated third parties.
- **Competition for business opportunities.** DISH Network may have 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 our businesses. DISH Network also has a distribution agreement with ViaSat, a competitor of our Hughes segment, to sell services similar to those offered by our Hughes segment. We may also compete with DISH Network when we participate in auctions for spectrum or orbital slots for our satellites or other business opportunities.

We may not be able to resolve any potential conflicts of interest with DISH Network 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 any agreements not to compete with DISH Network. However, many of our potential customers who compete with DISH Network have historically perceived us as a competitor due to our affiliation with DISH Network. There can be no assurance that we will be successful in entering into any commercial relationships with potential customers who are competitors of DISH Network (particularly if we continue to be perceived as affiliated with DISH Network as a result of common ownership, certain shared management services and other arrangements with DISH Network).

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

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

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

As discussed above, Mr. Ergen beneficially owns approximately 51% of our total equity securities and approximately 91% of the total voting power of all classes of shares and such ownership may make it impractical for any third party to obtain control of us.

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

Additionally, in order to preserve the intended tax treatment of the Distribution, we have agreed to comply with certain restrictions under current U.S. federal income tax laws for spin-offs, including, refraining from engaging in certain transactions that would result in a fifty percent or greater change by vote or by value in our stock ownership. This restriction could discourage third parties from seeking to acquire us.

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

Our articles of incorporation provide that, unless we consent in writing to an alternative forum, the Eighth Judicial District Court of Clark County of the State of Nevada will be the sole and exclusive forum for any and all actions, suits or proceedings, whether civil, administrative or investigative or that asserts any claim or counterclaim brought in our name or on our behalf, asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, employees or agents to us or our stockholders, arising or asserting a claim arising pursuant to any provision of the Nevada Restated Statutes Chapters 78 or 92A, our articles of incorporation or our bylaws, interpreting, applying, enforcing or determining the validity of our articles of incorporation or bylaws or asserting a claim that is governed by the internal affairs doctrine. Any person purchasing or otherwise acquiring any interest in any shares of our capital stock shall be deemed to have notice of and to have consented to this provision of our articles of incorporation. This choice of forum provision may limit our stockholders' ability to bring certain claims, including claims against our directors, officers or employees, in a judicial forum that the stockholder finds favorable and therefore the choice of forum provision may discourage lawsuits with respect to such claims. Stockholders who do bring a claim in the Eighth Judicial District Court of Clark County could face additional litigation costs in pursuing any such claim, particularly if they do not reside in or near Nevada. The Eighth Judicial District Court of Clark County may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments or results may be more favorable to us than to our stockholders. Alternatively, if a court were to find this provision of our articles of incorporation inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could have a material adverse effect on our business, financial condition or results of operations.

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

Our principal executive offices are located at 100 Inverness Terrace East, Englewood, Colorado 80112-5308 and our telephone number is (303) 706-4000. The following table sets forth certain information concerning our principal properties related to our Hughes segment ("Hughes") and EchoStar Satellite Services segment ("ESS") and to our other operations and administrative functions ("Corporate and Other") as of December 31, 2019. We operate various facilities in the United States and abroad. We believe that our facilities are well maintained and are sufficient to meet our current and projected needs.

Location	Segment(s)	Function
Owned:		
Englewood, Colorado	ESS/Corporate and Other	Corporate headquarters and engineering offices
Germantown, Maryland	Hughes	Hughes corporate headquarters, engineering offices, network operations and shared hubs
Griesheim, Germany	Hughes/Corporate and Other	Shared hub, operations, administrative offices and warehouse
Leased:		
Gilbert, Arizona	Hughes	Gateways
San Diego, California	Hughes	Engineering and sales offices
Englewood, Colorado	Hughes	Gateways and equipment
Gaithersburg, Maryland	Hughes	Manufacturing and testing facilities and logistics offices
Gaithersburg, Maryland	Hughes	Engineering and administrative offices
Southfield, Michigan	Hughes	Shared hub and regional network management center
Las Vegas, Nevada	Hughes	Shared hub, antennae yards, gateway, backup network operation and control center for Hughes corporate headquarters
Cheyenne, Wyoming	Hughes/ESS	Satellite access center, gateways and equipment
Barueri, Brazil	Hughes/Corporate and Other	Shared hub, warehouse, operations center and spacecraft operations center
Sao Paulo, Brazil	Hughes	Hughes Brazil corporate headquarters, sales offices and warehouse
Bangalore, India	Hughes	Engineering office and office space
Gurgaon, India	Hughes	Administrative offices, shared hub, operations, warehouse, and development center
New Delhi, India	Hughes	Hughes India corporate headquarters
Milton Keynes, United Kingdom	Hughes	Hughes Europe corporate headquarters and operations

ITEM 3. LEGAL PROCEEDINGS

For a discussion of legal proceedings, see Note 20 in our Accompanying Consolidated Financial Statements.

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 Price of and Dividends on the Registrant's Common Equity and Related Stockholder Matters

Market Information. Our Class A common stock is publicly traded on the NASDAQ Global Select Market under the symbol "SATS."

Holders. As of February 10, 2020, there were 50,115,719 shares of our Class A common stock outstanding held by 7,907 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 10, 2020, there were 47,687,039 shares of our Class B common stock outstanding, of which 1,348,249 shares were held by Charles W. Ergen, our Chairman and 46,338,790 shares were held in trusts and entities established for the benefit of Mr. Ergen's family. There is currently no established trading market for our Class B common stock.

Dividends. We have not paid any cash dividends on our common stock in the past two years. We currently do not intend to declare dividends on our common stock. Payment of any future dividends will depend upon our earnings, capital requirements, contractual restrictions and other factors the board of directors considers appropriate. We currently intend to retain our earnings, if any, to support operations, future growth and expansion, although we have repurchased and may, in the future, repurchase shares of our common stock from time to time. Our ability to declare dividends is affected by the covenants in our subsidiary Hughes Satellite Systems Corporation's indentures. See further discussion under Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources in this Form 10-K.

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 Form 10-K.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

Our Board of Directors previously authorized stock repurchases of up to \$500.0 million of our Class A common stock through and including December 31, 2019. On October 29, 2019, our Board of Directors terminated its prior authorization and authorized us to repurchase under this authorization up to \$500.0 million of our Class A common stock through and including December 31, 2020. Purchases under our repurchase authorization may be made through privately negotiated transactions, open market repurchases, one or more trading plans in accordance with Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, or otherwise, subject to market conditions and other factors. We may elect to purchase some or all of, or not to purchase the maximum amount or any of, the remaining shares allowable under this program and we may also enter into additional share repurchase programs authorized by our Board of Directors. During the year ended December 31, 2019, we did not repurchase any common stock under this program.

ITEM 6. SELECTED FINANCIAL DATA

The following tables present selected information relating to our consolidated financial condition and results of operations for the past five years. The selected financial data should be read in conjunction with Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations and our Accompanying Consolidated Financial Statements. Historical financial data presented below may not be indicative of future financial condition.

Statements of Operations Data:	For the years ended December 31,				
	2019	2018	2017 ⁽¹⁾	2016	2015
Total revenue ⁽²⁾ ⁽³⁾	\$ 1,886,081	\$ 1,762,638	\$ 1,525,155	\$ 1,447,223	\$ 1,485,942
Total costs and expenses	1,813,004	1,726,501	1,494,593	1,325,364	1,380,939
Operating income (loss)	\$ 73,077	\$ 36,137	\$ 30,562	\$ 121,859	\$ 105,003
Net income (loss) from continuing operations attributable to EchoStar common stock	\$ (102,318)	\$ (134,204)	\$ 123,188	\$ 43,886	\$ 59,189
Basic earnings (losses) per share - continuing operations	\$ (1.06)	\$ (1.39)	\$ 1.29	\$ 0.47	\$ 0.64
Diluted earnings (losses) per share - continuing operations	\$ (1.06)	\$ (1.39)	\$ 1.27	\$ 0.46	\$ 0.63

Balance Sheet Data:	As of December 31,				
	2019	2018	2017 ⁽¹⁾	2016	2015
Cash, cash equivalents and current marketable investments securities	\$ 2,460,054	\$ 3,210,458	\$ 3,245,617	\$ 3,092,881	\$ 1,527,883
Total assets	\$ 7,154,298	\$ 8,661,294	\$ 8,750,014	\$ 9,008,859	\$ 6,572,463
Total debt and finance lease obligations	\$ 2,390,219	\$ 3,305,784	\$ 3,371,961	\$ 3,360,387	\$ 1,861,384
Total stockholders' equity	\$ 3,745,553	\$ 4,155,474	\$ 4,177,385	\$ 4,006,805	\$ 3,781,642

Cash Flow Data:	For the years ended December 31,				
	2019	2018	2017	2016	2015
Net cash flows from:					
Operating activities	\$ 656,322	\$ 734,522	\$ 726,892	\$ 803,343	\$ 776,451
Investing activities	\$ 821,958	\$ (2,098,480)	\$ (867,932)	\$ (632,199)	\$ (275,311)
Financing activities	\$ (885,311)	\$ (136,563)	\$ 72	\$ 1,475,689	\$ (120,257)

(1) The 2017 Tax Act increased the complexity of our income tax accounting and resulted in significant adjustments to our deferred income tax accounts in 2017. As a result, our results of operations and balance sheet data for the years ended December 31, 2019, 2018 and 2017 are not comparable to our results of operations for the years ended December 31, 2016 and 2015. See Note 16 to our Accompanying Consolidated Financial Statements for further information.

(2) On January 1, 2018, we adopted Topic 606, *Revenue from Contracts with Customers*, using the modified retrospective approach. As a result, total revenues for the year ended December 31, 2019 and 2018 may not be comparable to prior years.

(3) On January 1, 2019, we adopted Topic 842, *Leases*, using the modified retrospective approach. As a result, total revenues for the year ended December 31, 2019 may not be comparable to prior years.

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

The following management's discussion and analysis of our financial condition and results of operations should be read in conjunction with our Accompanying Consolidated Financial Statements and notes thereto. This management's discussion and analysis is intended to help provide an understanding of our financial condition, changes in our financial condition and our results of operations. Many of the statements in this management's discussion and analysis are forward-looking statements that involve assumptions and are subject to risks and uncertainties that are often difficult to predict and beyond our control. Actual results could differ materially from those expressed or implied by such forward-looking statements. See Disclosure Regarding Forward-Looking Statements in this Form 10-K for further discussion. For a discussion of additional risks, uncertainties and other factors that could impact our results of operations or financial condition, see Item 1A. Risk Factors of this Form 10-K. Further, such forward-looking statements speak only as of the date of this Form 10-K and we undertake no obligation to update them.

EXECUTIVE SUMMARY

EchoStar is a global provider of broadband satellite technologies, broadband internet services for consumer customers, which include home and small to medium-sized businesses, and satellite services. We also deliver innovative network technologies, managed services and communications solutions for enterprise customers, which include aeronautical and government enterprises.

In May 2019, we and BSS Corp. entered into the Master Transaction Agreement with DISH and Merger Sub with respect to the BSS Transaction. Pursuant to the terms of the Master Transaction Agreement, on September 10, 2019: (i) we transferred the BSS Business to BSS Corp.; (ii) we completed the Distribution and (iii) immediately after the Distribution, (1) BSS Corp. became a wholly-owned subsidiary of DISH such that DISH owns and operates the BSS Business, and (2) each issued and outstanding share of BSS Common Stock owned by EchoStar stockholders was converted into the right to receive 0.23523769 shares of DISH Common Stock.

In connection with the BSS Transaction, we and DISH Network agreed to indemnify each other against certain losses with respect to breaches of certain representations and covenants and certain retained and assumed liabilities, respectively. Additionally, we and DISH and certain of our and their subsidiaries (i) entered into certain customary agreements covering, among other things, matters relating to taxes, employees, intellectual property and the provision of transitional services; (ii) terminated certain previously existing agreements; and (iii) amended certain existing agreements and entered into certain new agreements pursuant to which we and DISH Network will obtain and provide certain products, services and rights from and to each other.

The BSS Transaction was structured in a manner intended to be tax-free to us and our stockholders for U.S. federal income tax purposes and was accounted for as a spin-off to our shareholders as we did not receive any consideration. Following the consummation of the BSS Transaction, we no longer operate the BSS Business, which was a substantial portion of our ESS segment. As a result of the BSS Transaction, the financial results of the BSS Business, except for certain real estate that transferred in the transaction, are presented as discontinued operations and, as such, excluded from continuing operations and segment results for all periods presented in our Accompanying Consolidated Financial Statements. See Note 5 in our Accompanying Consolidated Financial Statements for further discussion of our discontinued operations.

Prior to March 2017, we operated in three primary business segments: Hughes, EchoStar Technologies and ESS. On January 31, 2017, EchoStar Corporation and certain of our subsidiaries entered into a share exchange agreement with DISH and certain of its subsidiaries. We received all the shares of the Tracking Stock in exchange for 100% of the equity interests of certain of our subsidiaries that held substantially all of our former EchoStar Technologies businesses and certain other assets. Following the consummation of the Share Exchange, we no longer operate our former EchoStar Technologies businesses, the Tracking Stock was retired and is no longer outstanding, and all agreements, arrangements and policy statements with respect to the Tracking Stock terminated. As a result of the Share Exchange, the financial results of the EchoStar Technologies businesses are presented as discontinued operations and, as such, have been excluded from continuing operations and segment results for all periods presented in our Accompanying Consolidated Financial Statements. See Note 5 in our Accompanying Consolidated Financial Statements for further discussion of our discontinued operations.

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

We currently operate in two business segments: Hughes and ESS. These segments are consistent with the way we make decisions regarding the allocation of resources, as well as how operating results are reviewed by our chief operating decision maker, who is the Company's Chief Executive Officer.

Our operations also include various corporate departments (primarily Executive, Treasury, Strategic Development, Human Resources, IT, Finance, Accounting, Real Estate and Legal) and other activities that have not been assigned to our operating segments such as costs incurred in certain satellite development programs and other business development activities, and gains or losses from certain of our investments. These activities, costs and income, as well as eliminations of intersegment transactions, are accounted for in *Corporate and Other* in our segment reporting.

Highlights from our financial results are as follows:

Consolidated Results of Operations for the Year Ended December 31, 2019

- Revenue of \$1.9 billion
- Operating income of \$73.1 million
- Net loss from continuing operations of \$113.7 million
- Net loss attributable to EchoStar common stock of \$62.9 million and basic loss per share of common stock of \$0.65
- Earnings before interest, taxes, depreciation and amortization ("EBITDA") of \$577.6 million (see reconciliation of this non-GAAP measure in Results of Operations)

Consolidated Financial Condition as of December 31, 2019

- Total assets of \$7.2 billion
- Total liabilities of \$3.4 billion
- Total stockholders' equity of \$3.7 billion
- Cash, cash equivalents and current marketable investment securities of \$2.5 billion

Hughes Segment

Our Hughes segment is a global provider of broadband satellite technologies and broadband internet services to consumer customers and broadband network technologies, managed services, equipment, hardware, satellite services and communications solutions to consumer and enterprise customers. The Hughes segment also designs, provides and installs gateway and terminal equipment to customers for other satellite systems. In addition, our Hughes segment designs, develops, constructs and provides telecommunication networks comprising satellite ground segment systems and terminals to mobile system operators and our enterprise customers.

We incorporate advances in technology to reduce costs and to increase the functionality and reliability of our products and services. Through advanced and proprietary methodologies, technologies, software and techniques, we continue to improve the efficiency of our networks. We invest in technologies to enhance our system and network management capabilities, specifically our managed services for enterprises. We also continue to invest in next generation technologies that can be applied to our future products and services.

We continue to focus our efforts on growing our consumer revenue by maximizing utilization of our existing satellites while planning for new satellites to be launched or acquired. Our consumer revenue growth depends on our success in adding new and retaining existing subscribers in our domestic and international markets across wholesale and retail channels. The growth of our enterprise businesses relies heavily on global economic conditions and the competitive landscape for pricing relative to competitors and alternative technologies. Service costs related to ongoing support for our direct and indirect customers and partners are typically impacted most significantly by our growth.

Our Hughes segment currently uses capacity from three of our satellites (the SPACEWAY 3 satellite, the EchoStar XVII satellite and the EchoStar XIX satellite), our Al Yah 3 Brazilian payload and additional satellite capacity acquired

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

from third-party providers to provide services to our customers. Growth of our consumer subscriber base continues to be constrained in areas where we are nearing or have reached maximum capacity. While these constraints are expected to be resolved when we launch new satellites, we continue to focus on revenue growth in all areas and consumer subscriber growth in the areas where we have available capacity.

In May 2019, we entered into an agreement with Yahsat pursuant to which, in November 2019, Yahsat contributed its satellite communications services business in Brazil to us in exchange for a 20% ownership interest in our existing Brazilian subsidiary that conducts our satellite communications services business in Brazil. The combined business provides broadband internet services and enterprise solutions in Brazil using the Telesat T19V satellite, the Eutelsat 65W satellite and Yahsat's Al Yah 3 satellite. Under the terms of the agreement, Yahsat may also acquire, for further cash investments, additional minority ownership interests in the business in the future provided certain conditions are met.

In May 2019, we also entered into an agreement with Bharti, pursuant to which Bharti will contribute its VSAT telecommunications services and hardware business in India to our two existing Indian subsidiaries that conduct our VSAT services and hardware business. The combined entities will provide broadband satellite and hybrid solutions for enterprise networks. Upon consummation of the transaction, Bharti will have a 33% ownership interest in the combined business. The completion of the transaction is subject to customary regulatory approvals and closing conditions. No assurance can be given that the transaction will be consummated on the terms agreed to or at all.

In August 2018, we entered into an agreement with Yahsat to establish a new entity, BCS, to provide commercial Ka-band satellite broadband services across Africa, the Middle East and southwest Asia operating over Yahsat's Al Yah 2 and Al Yah 3 Ka-band satellites. The transaction was consummated in December 2018 when we invested \$100.0 million in cash in exchange for a 20% interest in BCS. Under the terms of the agreement, we may also acquire, for further cash investments, additional ownership interests in BCS in the future provided certain conditions are met. We supply network operations and management services and equipment to BCS.

In August 2017, we entered into a contract for the design and construction of the EchoStar XXIV satellite, a new, next-generation, high throughput geostationary satellite, with a planned 2021 launch. The EchoStar XXIV satellite is primarily intended to provide additional capacity for our HughesNet service in North, Central and South America as well as enterprise broadband services. If the manufacture and/or delivery of the EchoStar XXIV satellite is not met or is delayed, such failure could have a material adverse impact on our business operations, future revenues, financial position and prospects and our planned expansion of satellite broadband services throughout North, South and Central America. Capital expenditures associated with the construction and launch of the EchoStar XXIV satellite are included in Corporate and Other in our segment reporting.

In March 2017, we and DISH Network entered into the Hughes Broadband MSA. Pursuant to the Hughes Broadband MSA, DISH Network, among other things, (i) has the right, but not the obligation, to market, promote and solicit orders and upgrades for our HughesNet service and related equipment and other telecommunication services; and (ii) installs HughesNet service equipment with respect to activations generated by DISH Network. As a result of the Hughes Broadband MSA, we have not earned, and do not expect to earn in the future, significant equipment revenue from our distribution agreement with DISH Network. We expect churn in the existing wholesale subscribers to continue to reduce *Services and other revenue* in the future.

We continue our efforts to expand our consumer satellite services business outside of the U.S. We have been delivering high-speed consumer satellite broadband services in Brazil since July 2016 and are also providing satellite broadband internet service in several other Central and South American countries. Additionally, in September 2015, we entered into 15-year agreements with affiliates of Telesat Canada for Ka-band capacity on the Telesat T19V satellite located at the 63 degree west longitude orbital location, which was launched in July 2018. Telesat T19V was placed in service during the fourth quarter of 2018 and augmented the capacity being provided by the EUTELSAT 65 West A satellite and the EchoStar XIX satellite in Central and South America.

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

Our broadband subscribers include customers that subscribe to our HughesNet services in North, Central and South America through retail, wholesale and small/medium enterprise service channels. Our approximate subscriber numbers as of December 31, 2019, 2018 and 2017 are as follows:

	As of December 31,		
	2019	2018	2017
Broadband subscribers	1,477,000	1,361,000	1,208,000

As of December 31, 2019, approximately 237,000 of our subscribers were in South and Central America. During the fourth quarter of 2019, we acquired approximately 20,000 new subscribers in connection with the consummation of our joint venture with Yahsat in Brazil (the "Acquired Subscribers").

The approximate subscriber net additions for each quarter in 2019 are as follows:

	For the Three Months Ended			
	December 31	September 30	June 30	March 31
Net additions, excluding Acquired Subscribers	20,000	22,000	26,000	28,000

During the fourth quarter of 2019, excluding the Acquired Subscribers:

- our gross subscriber additions were generally flat compared to the third quarter of 2019; and
- our net subscriber additions decreased by approximately 2,000 compared to the third quarter of 2019, reflecting increased churn in the fourth quarter compared to the third quarter.

As of December 31, 2019 and 2018, our Hughes segment had \$1.4 billion of contracted revenue backlog. We define Hughes contracted revenue backlog as our expected future revenue, including lease revenue, under customer contracts that are non-cancelable, excluding agreements with customers in our consumer market. Of the total Hughes contracted revenue backlog as of December 31, 2019, we expect to recognize \$455.6 million of revenue in 2020.

ESS Segment

Our ESS segment provides satellite services on a full-time and/or occasional-use basis to U.S. government service providers, internet service providers, broadcast news organizations, content providers and private enterprise customers. We operate our ESS business using primarily the EchoStar IX satellite and the EchoStar 105/SES-11 satellite and related infrastructure. Revenue in our ESS segment depends largely on our ability to continuously make use of our available satellite capacity with existing customers and our ability to enter into commercial relationships with new customers. Our ESS segment, like others in the fixed satellite services industry, has encountered, and may continue to encounter, negative pressure on transponder rates and demand.

As of December 31, 2019 and 2018, our ESS segment had contracted revenue backlog of \$11.4 million and \$5.8 million respectively. We define contracted revenue backlog for our ESS segment as contracted future satellite lease revenue. Of the total ESS contracted revenue backlog as of December 31, 2019, we expect to recognize \$7.2 million of revenue in 2020.

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

Other Business Opportunities

Our industry continues to evolve with the increasing worldwide demand for broadband internet access for information, entertainment and commerce. In addition to fiber and wireless systems, other technologies such as geostationary high throughput satellites, LEO networks, MEO systems, balloons and High Altitude Platform Systems are expected to play significant roles in enabling global broadband access, networks and services. We intend to use our expertise, technologies, capital, investments, global presence, relationships and other capabilities to continue to provide broadband internet systems, equipment, networks and services for information, the internet-of-things, entertainment and commerce in North America and internationally for consumer and enterprise customers. We are closely tracking the developments in next-generation satellite businesses, and we are seeking to utilize our services, technologies, licenses and expertise to find new commercial opportunities for our business.

We intend to continue to selectively explore opportunities to pursue investments, commercial alliances, partnerships, joint ventures, acquisitions, dispositions and other strategic initiatives and transactions, domestically and internationally, that we believe may allow us to increase our existing market share, increase our satellite capacity, expand into new markets and new customers, broaden our portfolio of services, products and intellectual property, make our business more valuable, align us for future growth and expansion, maximize the return on our investments and strengthen our business and relationships with our customers. We may allocate or dispose of significant resources for long-term value that may not have a short or medium-term or any positive impact on our revenue, results of operations, or cash flow.

S-Band Strategy

We continue to explore the development and deployment of S-band technologies and believe that our products and services will be integrated into new global, hybrid networks that leverage multiple satellites and terrestrial technologies. In December 2013, we acquired EML, which is licensed to provide MSS and CGC services covering the EU using S-band spectrum. EML's services in the EU are supported by our EchoStar XXI satellite and the W2A payload. In October 2019, we acquired EchoStar Global, which holds global S-band non-geostationary satellite spectrum rights for mobile satellite service. Additionally, we have entered into a contract with Tyvak Nano-Satellite Systems, Inc. for the design and construction of S-band nano-satellites, with expected launches in the first half of 2020. We expect our nano-satellites to facilitate our continued growth in the global S-band market and enable us to leverage our acquisition of EchoStar Global. In addition, in November 2019, we were granted an S-band spectrum license for terrestrial rights in Mexico. As of December 31, 2019, we have no material future commitments in connection with these acquisitions.

Cybersecurity

As a global provider of satellite technologies and services, internet services and communications equipment and networks, we may be prone to more targeted and persistent levels of cyber-attacks than other businesses. These risks may be more prevalent as we continue to expand and grow our business into other areas of the world outside of North America, some of which are still developing their cybersecurity infrastructure maturity. Detecting, deterring, preventing and mitigating incidents caused by hackers and other parties may result in significant costs to us and may expose our customers to financial or other harm that have the potential to significantly increase our liability.

We treat cybersecurity risk seriously and are focused on maintaining the security of our and our partners' systems, networks, technologies and data. We regularly review and revise our relevant policies and procedures, invest in and maintain internal resources, personnel and systems and review, modify and supplement our defenses through the use of various services, programs and outside vendors. We also maintain agreements with third party vendors and experts to assist in our remediation and mitigation efforts if we experience or identify a material incident or threat. In addition, senior management and the Audit Committee of our Board of Directors are regularly briefed on cybersecurity matters.

We are not aware of any cyber-incidents with respect to our owned or leased satellites or other networks, equipment or systems that have had a material adverse effect on our business, costs, operations, prospects, results of operation or financial position during the year ended December 31, 2019. There can be no assurance, however, that any such incident can be detected or thwarted or will not have such a material adverse effect in the future.

Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS - Continued
RESULTS OF OPERATIONS
Year Ended December 31, 2019 Compared to the Year Ended December 31, 2018

The following table presents our consolidated results of operations for the year ended December 31, 2019 compared to the year ended December 31, 2018:

Statements of Operations Data ⁽¹⁾	For the years ended December 31,		Variance	
	2019	2018	Amount	%
Revenue:				
Services and other revenue	\$ 1,619,271	\$ 1,557,228	\$ 62,043	4.0
Equipment revenue	266,810	205,410	61,400	29.9
Total revenue	1,886,081	1,762,638	123,443	7.0
Costs and expenses:				
Cost of sales - services and other	561,353	563,907	(2,554)	(0.5)
% of total services and other revenue	34.7%	36.2%		
Cost of sales - equipment	226,002	176,600	49,402	28.0
% of total equipment revenue	84.7%	86.0%		
Selling, general and administrative expenses	509,145	436,088	73,057	16.8
% of total revenue	27.0%	24.7%		
Research and development expenses	25,739	27,570	(1,831)	(6.6)
% of total revenue	1.4%	1.6%		
Depreciation and amortization	490,765	457,116	33,649	7.4
Impairment of long-lived assets	—	65,220	(65,220)	(100.0)
Total costs and expenses	1,813,004	1,726,501	86,503	5.0
Operating income (loss)	73,077	36,137	36,940	*
Other income (expense):				
Interest income	82,352	80,275	2,077	2.6
Interest expense, net of amounts capitalized	(251,016)	(219,288)	(31,728)	14.5
Gains (losses) on investments, net	28,912	(12,622)	41,534	*
Equity in earnings (losses) of unconsolidated affiliates, net	(14,734)	(5,954)	(8,780)	*
Foreign currency transaction gains (losses), net	(11,590)	(15,583)	3,993	(25.6)
Other, net	(166)	11,249	(11,415)	*
Total other income (expense), net	(166,242)	(161,923)	(4,319)	2.7
Income (loss) from continuing operations before income taxes	(93,165)	(125,786)	32,621	(25.9)
Income tax benefit (provision), net	(20,488)	(6,576)	(13,912)	*
Net income (loss) from continuing operations	(113,653)	(132,362)	18,709	(14.1)
Net income (loss) from discontinued operations	39,401	93,729	(54,328)	(58.0)
Net income (loss)	(74,252)	(38,633)	(35,619)	92.2
Less: Net income (loss) attributable to non-controlling interests	(11,335)	1,842	(13,177)	*
Net income (loss) attributable to EchoStar Corporation common stock	\$ (62,917)	\$ (40,475)	\$ (22,442)	55.4
Other data:				
EBITDA ⁽²⁾	\$ 577,599	\$ 468,501	\$ 109,098	23.3
Subscribers, end of period	1,477,000	1,361,000	116,000	8.5

* Percentage is not meaningful.

(1) An explanation of our key metrics is included in Explanation of Key Metrics and Other Items.

(2) A reconciliation of EBITDA to Net income (loss), the most directly comparable U.S. GAAP measure in our Accompanying Consolidated Financial Statements, is included in Results of Operations. For further information on our use of EBITDA, see Explanation of Key Metrics and Other Items.

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

The following discussion relates to our continuing operations for the years ended December 31, 2019 and 2018 unless otherwise stated.

Services and other revenue. Services and other revenue totaled \$1.6 billion for the year ended December 31, 2019, an increase of \$62.0 million or 4.0%, compared to 2018.

- Services and other revenue from our Hughes segment for the year ended December 31, 2019 increased by \$74.9 million, or 5.0%, to \$1.6 billion compared to 2018. The increase was primarily attributable to increases in sales of broadband services to our consumer customers of \$102.0 million, primarily offset by a decrease in sales of services to our enterprise customers of \$30.7 million.
- Services and other revenue from our ESS segment for the year ended December 31, 2019 decreased by \$11.0 million, or 40.3%, to \$16.3 million compared to 2018. The decrease was due to a decrease of \$9.2 million in transponder services provided to third parties and a decrease of \$1.6 million in satellite capacity leased to DISH Network on the EchoStar IX satellite.

Equipment revenue. Equipment revenue totaled \$266.8 million for the year ended December 31, 2019, an increase of \$61.4 million, or 29.9%, compared to 2018. The increase was primarily attributable to our Hughes segment due to increases in hardware sales of \$45.9 million to our enterprise customers and \$15.5 million to our mobile satellite systems customers.

Cost of sales - services and other. Cost of sales - services and other totaled \$561.4 million for the year ended December 31, 2019, a decrease of \$2.6 million, or 0.5%, compared to 2018. The decrease was primarily attributable to our Hughes segment due to lower costs of services provided to our enterprise customers, partially offset by an increase in costs of services to our consumer customers.

Cost of sales - equipment. Cost of sales - equipment totaled \$226.0 million for the year ended December 31, 2019, an increase of \$49.4 million, or 28.0%, compared to 2018. The increase was primarily attributable to our Hughes segment due to an increase in hardware sales to our enterprise customers and our mobile satellite systems customers.

Selling, general and administrative expenses. Selling, general and administrative expenses totaled \$509.1 million for the year ended December 31, 2019, an increase of \$73.1 million, or 16.8%, compared to 2018. The increase was primarily attributable to increases in (i) expense of \$32.5 million related to certain legal proceedings, (ii) marketing and promotional expenses of \$22.5 million from our Hughes segment mainly associated with our consumer business, (iii) bad debt expense of \$5.0 million and (iv) other general and administrative expenses of \$13.1 million.

Depreciation and amortization. Depreciation and amortization expenses totaled \$490.8 million for the year ended December 31, 2019, an increase of \$33.6 million, or 7.4%, compared to 2018. The increase was primarily from our Hughes segment and due to increases in depreciation expense of (i) \$20.2 million relating to our customer premises equipment, (ii) \$4.8 million relating to the Telesat T19V satellite that was placed into service in the fourth quarter of 2018, (iii) \$3.1 million relating to the decrease in depreciable life of the SPACEWAY 3 satellite and (iv) \$2.0 million relating to the depreciation of assets acquired from Yahsat in Brazil.

Impairment of long-lived assets. There was no impairment of long-lived assets for the year ended December 31, 2019, compared to \$65.2 million for the year ended December 31, 2018, which was primarily attributable to the determination that the fair value of our 45 degree west longitude regulatory authorization was de minimis and our recognition of a loss on the assets and in-substance liquidation of the business related to it.

Interest expense, net of amounts capitalized. Interest expense, net of amounts capitalized totaled \$251.0 million for the year ended December 31, 2019, an increase of \$31.7 million, or 14.5%, compared to 2018. The increase was primarily due to an increase of \$76.3 million in interest expense associated with certain legal proceedings. The increase was partially offset by a decrease of \$39.1 million in interest expense and the amortization of deferred financing cost as a result of the repurchase and maturity of our 6 1/2% Senior Secured Notes due 2019 (the "2019 Senior Secured Notes") and a net increase of \$4.3 million in capitalized interest relating to the construction of the EchoStar XXIV satellite.

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

Gains (losses) on investments, net. Gains (losses) on investments, net totaled \$28.9 million of net gains for the year ended December 31, 2019, an increase of \$41.5 million compared to 2018. The increase was primarily attributable to an increase in gains on marketable investment securities of \$78.2 million in 2019, partially offset by \$36.7 million in losses on certain investments in 2019.

Equity in earnings (losses) of unconsolidated affiliates, net. Equity in earnings (losses) of unconsolidated affiliates, net totaled \$14.7 million in loss for the year ended December 31, 2019, an increase in loss of \$8.8 million compared to 2018, which was related to an increase in loss from our equity method investments. Additionally, in the fourth quarter of 2019, we changed our accounting policy to record our share of net earnings or losses of investees on a three-month lag.

Foreign currency transaction gains (losses), net. Foreign currency transaction gains (losses), net totaled \$11.6 million in losses for the year ended December 31, 2019, a decrease in losses of \$4.0 million, or 25.6%, compared to 2018. The decrease in losses was due to the net strengthening of the U.S. dollar against certain foreign currencies in 2019 compared to 2018.

Other, net. Other, net totaled \$0.2 million in loss for the year ended December 31, 2019 compared to \$11.2 million in income for the year ended December 31, 2018. The decrease in income of \$11.4 million was primarily due to a net gain of \$9.6 million due to the one-time settlement of certain amounts due to and from a third party vendor in 2018 and a net decrease of \$2.8 million in dividends received from certain marketable equity securities in 2019 compared to 2018.

Income tax benefit (provision), net. Income tax benefit (provision), net was \$20.5 million in provision for the year ended December 31, 2019, an increase of \$13.9 million, compared to 2018. Our effective income tax rate was (59.8)% and (5.5)% for the years ended December 31, 2019 and 2018, respectively. The variations in our current year effective tax rate from the U.S. federal statutory rate for the year ended December 31, 2019 were primarily due to the increase in our valuation allowance associated with certain foreign losses and by the impact of state and local taxes partially offset by the change in valuation allowance related to net unrealized gains that are capital in nature and research and experimentation credits. For the year ended December 31, 2018, we recorded a tax provision of zero related to the tax on deemed mandatory repatriation of our unrepatriated foreign earnings. As a result of the release of new treasury regulations in June 2019, we have recorded additional tax expense of \$1.5 million on deemed mandatory repatriation of certain deferred foreign earnings. The variations in our effective tax rate from the U.S. federal statutory rate for the year ended December 31, 2018 were primarily due to research and experimentation credits and the change in our valuation allowance associated with unrealized gains that are capital in nature, partially offset by the impact of state and local taxes and the increase in our valuation allowance associated with certain foreign losses.

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

Net income (loss) attributable to EchoStar Corporation common stock. Net income (loss) attributable to EchoStar Corporation common stock was a net loss of \$62.9 million for the year ended December 31, 2019 compared to a net loss of \$40.5 million for the year ended December 31, in 2018 as set forth in the following table:

	Amounts	
Net income (loss) attributable to EchoStar Corporation for the year ended December 31, 2018	\$	(40,475)
Increase (decrease) in gains on investments, net		41,534
Increase (decrease) in operating income, including depreciation and amortization		36,940
Decrease (increase) in net income attributable to non-controlling interests		13,177
Decrease (increase) in foreign currency transaction losses, net		3,993
Increase (decrease) in interest income		2,077
Increase (decrease) in equity in earnings of unconsolidated affiliates, net		(8,780)
Increase (decrease) in other, net		(11,415)
Decrease (increase) in income tax provision, net		(13,912)
Decrease (increase) in interest expense, net of amounts capitalized		(31,728)
Increase (decrease) in net income from discontinued operations		(54,328)
Net income (loss) attributable to EchoStar Corporation for the year ended December 31, 2019	\$	(62,917)

EBITDA. EBITDA is a non-GAAP financial measure and is described under Explanation of Key Metrics and Other Items below. The following table reconciles EBITDA to Net income (loss), the most directly comparable U.S. GAAP measure in our Accompanying Consolidated Financial Statements:

	For the years ended December 31,		Variance	
	2019	2018	Amount	%
Net income (loss)	\$ (74,252)	\$ (38,633)	\$ (35,619)	92.2
Interest income	(82,352)	(80,275)	(2,077)	2.6
Interest expense, net of amounts capitalized	251,016	219,288	31,728	14.5
Income tax provision (benefit), net	20,488	6,576	13,912	*
Depreciation and amortization	490,765	457,116	33,649	7.4
Net (income) loss from discontinued operations	(39,401)	(93,729)	54,328	(58.0)
Net (income) loss attributable to non-controlling interests	11,335	(1,842)	13,177	*
EBITDA	\$ 577,599	\$ 468,501	\$ 109,098	23.3

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

EBITDA was \$577.6 million for the year ended December 31, 2019, an increase of \$109.1 million, or 23.3%, compared to 2018 as set forth in the following table:

	Amounts
EBITDA for the year ended December 31, 2018	\$ 468,501
Increase (decrease) in gains on investments, net	41,534
Increase (decrease) in operating income, including depreciation and amortization	36,940
Increase (decrease) in depreciation and amortization	33,649
Decrease (increase) in net income attributable to non-controlling interests	13,177
Decrease (increase) in foreign currency transaction losses, net	3,993
Increase (decrease) in equity in earnings of unconsolidated affiliates, net	(8,780)
Increase (decrease) in other, net	(11,415)
EBITDA for the year ended December 31, 2019	<u>\$ 577,599</u>

Segment Operating Results and Capital Expenditures

The following tables present our operating results, capital expenditures and EBITDA by segment for the year ended December 31, 2019 compared to the year ended December 31, 2018. Capital expenditures are net of refunds and other receipts related to property and equipment.

	Hughes	ESS	Corporate and Other	Consolidated Total
For the year ended December 31, 2019				
Total revenue	\$ 1,852,742	\$ 16,257	\$ 17,082	\$ 1,886,081
Capital expenditures	308,781	—	109,293	418,074
EBITDA	625,660	6,994	(55,055)	577,599
For the year ended December 31, 2018				
Total revenue	\$ 1,716,528	\$ 27,231	\$ 18,879	\$ 1,762,638
Capital expenditures	390,108	(76,757)	164,091	477,442
EBITDA	601,319	17,764	(150,582)	468,501

Hughes Segment

	For the years ended December 31,		Variance	
	2019	2018	Amount	%
Total revenue	\$ 1,852,742	\$ 1,716,528	\$ 136,214	7.9
Capital expenditures	308,781	390,108	(81,327)	(20.8)
EBITDA	625,660	601,319	24,341	4.0

Total revenue was \$1.9 billion for the year ended December 31, 2019, an increase of \$136.2 million, or 7.9%, compared to 2018. The increase was primarily due to an increase of \$102.0 million in sales of broadband services to our consumer customers and net increases in hardware sales of \$45.9 million to our enterprise customers and \$15.5 million to our mobile satellite systems customers. The increase was partially offset by a decrease of \$30.7 million in sales of services to our enterprise customers.

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

Capital expenditures were \$308.8 million for the year ended December 31, 2019, a decrease of \$81.3 million, or 20.8%, compared to 2018, primarily due to net decreases in capital expenditures associated with the construction and infrastructure of our satellites and in our consumer and enterprise businesses.

EBITDA was \$625.7 million for the year ended December 31, 2019, an increase of \$24.3 million, or 4.0%, compared to 2018 as set forth in the following table:

	Amounts
EBITDA for the year ended December 31, 2018	\$ 601,319
Increase (decrease) in depreciation and amortization	40,050
Decrease (increase) in net income attributable to non-controlling interests	13,177
Decrease (increase) in foreign currency transaction losses, net	2,613
Increase (decrease) in other, net	(197)
Increase (decrease) in equity in earnings of unconsolidated affiliates, net	(5,477)
Increase (decrease) in gains on investments, net	(8,890)
Increase (decrease) in operating income, including depreciation and amortization	(16,935)
EBITDA for the year ended December 31, 2019	<u>\$ 625,660</u>

ESS Segment

	For the years ended December 31,		Variance	
	2019	2018	Amount	%
Total revenue	\$ 16,257	\$ 27,231	\$ (10,974)	(40.3)
Capital expenditures	—	(76,757)	76,757	(100.0)
EBITDA	6,994	17,764	(10,770)	(60.6)

Total revenue was \$16.3 million for the year ended December 31, 2019, a decrease of \$11.0 million, or 40.3%, compared to 2018. The decrease was attributable to a net decrease of \$9.2 million in transponder services provided to third parties and a decrease of \$1.6 million in satellite capacity leased to DISH Network on the EchoStar IX satellite.

There were no capital expenditures for the year ended December 31, 2019, as there were no new satellites under construction in our ESS segment during the year. The negative capital expenditure in 2018 for \$76.8 million is primarily driven by a reimbursement of \$77.5 million related to the EchoStar 105/SES-11 satellite received in the first quarter of 2018.

EBITDA was \$7.0 million for the year ended December 31, 2019, a decrease of \$10.8 million, or 60.6%, compared to 2018, primarily due to the decrease in overall ESS revenue.

Corporate and Other

	For the years ended December 31,		Variance	
	2019	2018	Amount	%
Total revenue	\$ 17,082	\$ 18,879	\$ (1,797)	(9.5)
Capital expenditures	109,293	164,091	(54,798)	(33.4)
EBITDA	(55,055)	(150,582)	95,527	(63.4)

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

Capital expenditures were \$109.3 million for the year ended December 31, 2019, a decrease of \$54.8 million, or 33.4%, compared to 2018, primarily due to decreases in satellite expenditures on the EchoStar XXIV satellite.

EBITDA was a loss of \$55.1 million for the year ended December 31, 2019, a decrease in loss of \$95.5 million, or 63.4% compared to 2018 as set forth in the following table:

	<u>Amounts</u>
EBITDA for the year ended December 31, 2018	\$ (150,582)
Increase (decrease) in operating income, including depreciation and amortization	64,784
Increase (decrease) in gains on investments, net	50,423
Decrease (increase) in foreign currency transaction losses, net	1,380
Increase (decrease) in equity in earnings of unconsolidated affiliates, net	(3,303)
Increase (decrease) in depreciation and amortization	(6,538)
Increase (decrease) in other, net	(11,219)
EBITDA for the year ended December 31, 2019	<u>\$ (55,055)</u>

Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS - Continued
Year Ended December 31, 2018 Compared to the Year Ended December 31, 2017

The following table presents our consolidated results of operations for the year ended December 31, 2018 compared to the year ended December 31, 2017:

Statements of Operations Data ⁽¹⁾	For the years ended December 31,		Variance	
	2018	2017	Amount	%
Revenue:				
Services and other revenue	\$ 1,557,228	\$ 1,285,666	\$ 271,562	21.1
Equipment revenue	205,410	239,489	(34,079)	(14.2)
Total revenue	1,762,638	1,525,155	237,483	15.6
Costs and expenses:				
Cost of sales - services and other	563,907	500,773	63,134	12.6
% of total services and other revenue	36.2%	39.0%		
Cost of sales - equipment	176,600	195,151	(18,551)	(9.5)
% of total equipment revenue	86.0%	81.5%		
Selling, general and administrative expenses	436,088	370,500	65,588	17.7
% of total revenue	24.7%	24.3%		
Research and development expenses	27,570	31,745	(4,175)	(13.2)
% of total revenue	1.6%	2.1%		
Depreciation and amortization	457,116	385,662	71,454	18.5
Impairment of long-lived assets	65,220	10,762	54,458	*
Total costs and expenses	1,726,501	1,494,593	231,908	15.5
Operating income (loss)	36,137	30,562	5,575	18.2
Other income (expense):				
Interest income	80,275	44,619	35,656	79.9
Interest expense, net of amounts capitalized	(219,288)	(184,389)	(34,899)	18.9
Gains (losses) on investments, net	(12,622)	53,453	(66,075)	*
Equity in earnings (losses) of unconsolidated affiliates, net	(5,954)	16,973	(22,927)	*
Foreign currency transaction gains (losses), net	(15,583)	1,218	(16,801)	*
Other, net	11,249	5,364	5,885	*
Total other income (expense), net	(161,923)	(62,762)	(99,161)	*
Income (loss) from continuing operations before income taxes	(125,786)	(32,200)	(93,586)	*
Income tax benefit (provision), net	(6,576)	155,107	(161,683)	*
Net income (loss) from continuing operations	(132,362)	122,907	(255,269)	*
Net income (loss) from discontinued operations	93,729	270,582	(176,853)	(65.4)
Net income (loss)	(38,633)	393,489	(432,122)	*
Less: Net income (loss) attributable to non-controlling interests	1,842	928	914	98.5
Net income (loss) attributable to EchoStar Corporation	\$ (40,475)	\$ 392,561	\$ (433,036)	*
Other data:				
EBITDA ⁽²⁾	\$ 468,501	\$ 492,304	\$ (23,803)	(4.8)
Subscribers, end of period	1,361,000	1,208,000	153,000	12.7

* Percentage is not meaningful.

(1) An explanation of our key metrics is included in Explanation of Key Metrics and Other Items.

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

(2) A reconciliation of EBITDA to Net income (loss), the most directly comparable U.S. GAAP measure in our Accompanying Consolidated Financial Statements, is included in Results of Operations. For further information on our use of EBITDA, see Explanation of Key Metrics and Other Items.

Services and other revenue. Services and other revenue totaled \$1.6 billion for the year ended December 31, 2018, an increase of \$271.6 million, or 21.1%, compared to 2017.

- Services and other revenue from our Hughes segment for the year ended December 31, 2018 increased by \$272.6 million, or 22.0%, to \$1.5 billion compared to 2017. The increase was mainly due to increases in sales of broadband services to our consumer and enterprise customers of \$271.0 million and \$28.1 million, respectively. The increase was partially offset by a decrease of \$32.5 million in residential wholesale broadband services.
- Services and other revenue from our ESS segment for the year ended December 31, 2018 decreased by \$3.2 million, or 10.5%, to \$27.2 million compared to 2017. The decrease was primarily a result of a decrease in satellite capacity leased to DISH Network on the EchoStar IX satellite.

Equipment revenue. Equipment revenue totaled \$205.4 million for the year ended December 31, 2018, a decrease of \$34.1 million, or 14.2%, compared to 2017. The decrease was primarily due to a decrease in hardware sales in our Hughes segment of \$22.7 million to our domestic enterprise customers, \$8.4 million to our mobile satellite systems customers and \$5.8 million to our consumer customers. The decrease was partially offset by an increase in hardware sales in our Hughes segment of \$3.1 million to our international enterprise customers.

Cost of sales - services and other. Cost of sales - services and other totaled \$563.9 million for the year ended December 31, 2018, an increase of \$63.1 million, or 12.6%, compared to 2017. The increase was from our Hughes segment and was mainly due to an increase in the costs of broadband services provided to our consumer and enterprise customers supporting the increased subscribers and revenue.

Cost of sales - equipment. Cost of sales - equipment totaled \$176.6 million for the year ended December 31, 2018, a decrease of \$18.6 million, or 9.5%, compared to 2017. The decrease was primarily attributable to a decrease in hardware sales in our Hughes segment provided to our consumer customers, domestic enterprise customers and mobile satellite systems customers, partially offset by an increase in hardware sales in our Hughes segment to our international enterprise customers.

Selling, general and administrative expenses. Selling, general and administrative expenses totaled \$436.1 million for the year ended December 31, 2018, an increase of \$65.6 million, or 17.7%, compared to 2017. Selling expenses increased \$37.5 million primarily attributable to the amortization of contract acquisition and fulfillment costs from our Hughes segment and an increase in marketing and promotional costs from our Hughes segment mainly associated with our consumer business. General and administration expenses increased \$32.3 million primarily attributable to increases in bad debt expense, costs associated with beginning operations in certain Central and South American countries and other administrative costs from our Hughes segment.

Depreciation and amortization. Depreciation and amortization expenses totaled \$457.1 million for the year ended December 31, 2018, an increase of \$71.5 million, or 18.5%, compared to 2017. The increase was primarily due to an increase in depreciation expense of: (i) \$33.3 million relating to the EchoStar XIX satellite, the EchoStar XXI satellite and the EchoStar 105/SES-11 satellite that were placed into service in the first and fourth quarters of 2017, respectively and the Telesat T19V satellite that was placed into service in the fourth quarter of 2018, (ii) \$28.2 million relating to our customer rental equipment, (iii) \$10.7 million relating to machinery and equipment and (iv) \$9.2 million relating to the decrease in depreciable life of the SPACEWAY 3 satellite. The increase in depreciation expense was partially offset by a decrease of \$7.5 million in amortization expense from certain fully amortized other intangible assets in our Hughes segment.

Impairment of long-lived assets. During the year ended December 31, 2018, impairment of long-lived assets of \$65.2 million was primarily attributable to the determination that the fair value of our 45 degree west longitude regulatory authorization was de minimis and our recognition of a loss on the assets and in-substance liquidation of the business related to it. During the year ended December 31, 2017, impairment of long-lived assets of \$10.8 million was primarily

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

attributable to an impairment loss of \$6.0 million relating to our regulatory authorizations with indefinite lives from our ESS segment and a loss of \$4.8 million due to impairment of certain projects in construction in progress from Corporate and Other.

Interest income. Interest income totaled \$80.3 million for the year ended December 31, 2018, an increase of \$35.7 million, or 79.9% compared to 2017. The increase was primarily attributable to an increase in our percentage yield on marketable investments.

Interest expense, net of amounts capitalized. Interest expense, net of amounts capitalized totaled \$219.3 million for the year ended December 31, 2018, an increase of \$34.9 million, or 18.9%, compared to 2017. The increase was primarily due to a decrease of \$44.6 million in capitalized interest relating to the EchoStar XIX satellite that was placed into service in the first quarter of 2017 and the EchoStar XXI satellite and the EchoStar 105/SES-11 satellite that were placed into service in the fourth quarter of 2017. The increase was partially offset by an increase of \$10.7 million in capitalized interest relating to the construction of the EchoStar XXIV satellite.

Gains (losses) on investments, net. Gains (losses) on investments, net totaled \$12.6 million in losses for the year ended December 31, 2018 compared to \$53.5 million in gains for the year ended December 31, 2017. For the year ended December 31, 2018, the net loss included (i) unrealized losses of \$16.6 million on certain marketable equity securities and (ii) unrealized gains of \$4.2 million on certain debt securities that we account for using the fair value option. For the year ended December 31, 2017, the net gain included (i) gains of \$45.0 million attributable to unrealized gains on certain marketable equity securities, (ii) gains of \$8.9 million from the sale of our investment in Invidi Technologies Corporation ("Invidi") to an entity owned in part by DISH Network, (iii) gains of \$2.8 million from the sales of certain available-for-sale securities and (iv) an other-than-temporary impairment loss of \$3.3 million on one of our available-for-sale securities.

Equity in earnings (losses) of unconsolidated affiliates, net. Equity in losses of unconsolidated affiliates, net totaled \$6.0 million for the year ended December 31, 2018 compared to \$17.0 million in earnings for the year ended December 31, 2017. The change of \$22.9 million was primarily related to a decrease in earnings from our investments in our unconsolidated affiliates.

Foreign currency transaction gains (losses), net. Foreign currency transaction gains (losses), net totaled \$15.6 million in losses for the year ended December 31, 2018 compared to \$1.2 million in gains for the year ended December 31, 2017. The increase in losses was due to the strengthening of the U.S. dollar against certain foreign currencies in 2018.

Other, net. Other, net totaled \$11.2 million in income for the year ended December 31, 2018, an increase of \$5.9 million, compared to 2017. The increase was mainly due to a net gain of \$9.6 million due to the one-time settlement of certain amounts due to and from a third party vendor in the second quarter of 2018, partially offset by a decrease of \$2.9 million in dividends received from certain marketable equity securities in 2018.

Income tax benefit (provision), net. Income tax provision was \$6.6 million for the year ended December 31, 2018 compared to an income tax benefit of \$155.1 million for the year ended December 31, 2017. Our effective income tax rate was (5.2)% and 536.0% for the year ended December 31, 2018 and 2017, respectively. The variations in our current year effective tax rate from the U.S. federal statutory rate were primarily due to the change in net unrealized gains that are capital in nature and research and experimentation credits, partially offset by the impact of state and local taxes and the increase in our valuation allowance associated with certain foreign losses. In addition, we did not record any tax benefit from the impairment of long-lived assets in Brazil as we do not expect to realize a tax benefit from this loss in the foreseeable future. This resulted in further variance from the U.S. statutory effective rate in 2018. The variations in our effective tax rate from the U.S. federal statutory rate for the year ended December 31, 2017 were primarily due to the 2017 Tax Act, the recognition of a one-time tax benefit for the revaluation of our deferred tax assets and liabilities due to a change in our state effective tax rate as a result of the Share Exchange, the increase in our valuation allowance associated with unrealized gains that are capital in nature, and change in the amount of unrecognized tax benefit from uncertain tax positions. The tax benefit recognized from the change in our effective tax rate was partially offset by the increase in our valuation allowance associated with certain state and foreign losses.

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

Net income (loss) attributable to EchoStar Corporation. Net income (loss) attributable to EchoStar Corporation common stock was a net loss of \$40.5 million for the year ended December 31, 2018, compared to net income of \$392.6 million for the year ended December 31, 2017, as set forth in the following table:

	<u>Amounts</u>	
Net income (loss) attributable to EchoStar Corporation for the year ended December 31, 2017	\$	392,561
Increase (decrease) in interest income		35,656
Increase (decrease) in other, net		5,885
Increase (decrease) in operating income, including depreciation and amortization		5,575
Decrease (increase) in net income attributable to non-controlling interests		(914)
Decrease (increase) in foreign currency transaction losses, net		(16,801)
Increase (decrease) in equity in earnings of unconsolidated affiliates, net		(22,927)
Decrease (increase) in interest expense, net of amounts capitalized		(34,899)
Increase (decrease) in gains on investments, net		(66,075)
Decrease (increase) in income tax provision, net		(161,683)
Increase (decrease) in net income from discontinued operations		(176,853)
Net income (loss) attributable to EchoStar Corporation for the year ended December 31, 2018	\$	<u>(40,475)</u>

EBITDA. EBITDA is a non-GAAP financial measure and is described under Explanation of Key Metrics and Other Items below. The following table reconciles EBITDA to *Net income (loss)*, the most directly comparable U.S. GAAP measure in our Accompanying Consolidated Financial Statements:

	<u>For the years ended December 31,</u>		<u>Variance</u>	
	<u>2018</u>	<u>2017</u>	<u>Amount</u>	<u>%</u>
Net income (loss)	\$ (38,633)	\$ 393,489	\$ (432,122)	*
Interest income	(80,275)	(44,619)	(35,656)	79.9
Interest expense, net of amounts capitalized	219,288	184,389	34,899	18.9
Income tax (benefit) provision, net	6,576	(155,107)	161,683	*
Depreciation and amortization	457,116	385,662	71,454	18.5
Net (income) loss from discontinued operations	(93,729)	(270,582)	176,853	(65.4)
Net (income) loss attributable to non-controlling interests	(1,842)	(928)	(914)	98.5
EBITDA	<u>\$ 468,501</u>	<u>\$ 492,304</u>	<u>\$ (23,803)</u>	(4.8)

* Percentage is not meaningful.

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

EBITDA was \$468.5 million for the year ended December 31, 2018, a decrease of \$23.8 million, or 4.8%, compared to 2017 as set forth in the following table:

	Amounts
EBITDA for the year ended December 31, 2017	\$ 492,304
Increase (decrease) in depreciation and amortization	71,454
Increase (decrease) in other, net	5,885
Increase (decrease) in operating income, including depreciation and amortization	5,575
Decrease (increase) in net income attributable to non-controlling interests	(914)
Decrease (increase) in foreign currency transaction losses, net	(16,801)
Increase (decrease) in equity in earnings of unconsolidated affiliates, net	(22,927)
Increase (decrease) in gains on investments, net	(66,075)
EBITDA for the year ended December 31, 2018	<u>\$ 468,501</u>

Segment Operating Results and Capital Expenditures

The following tables present our operating results, capital expenditures and EBITDA by segment for the year ended December 31, 2018 compared to the year ended December 31, 2017. Capital expenditures in the table above are net of refunds and other receipts related to property and equipment.

	<u>Hughes</u>	<u>ESS</u>	<u>Corporate and Other</u>	<u>Consolidated Total</u>
For the year ended December 31, 2018				
Total revenue	\$ 1,716,528	\$ 27,231	\$ 18,879	\$ 1,762,638
Capital expenditures	390,108	(76,757)	164,091	477,442
EBITDA	601,319	17,764	(150,582)	468,501
For the year ended December 31, 2017				
Total revenue	\$ 1,477,918	\$ 30,417	\$ 16,820	\$ 1,525,155
Capital expenditures	376,502	20,026	169,157	565,685
EBITDA	475,222	16,074	1,008	492,304

Hughes Segment

	<u>For the years ended December 31,</u>		<u>Variance</u>	
	<u>2018</u>	<u>2017</u>	<u>Amount</u>	<u>%</u>
Total revenue	\$ 1,716,528	\$ 1,477,918	\$ 238,610	16.1
Capital expenditures	390,108	376,502	13,606	3.6
EBITDA	601,319	475,222	126,097	26.5

Total revenue was \$1.7 billion for the year ended December 31, 2018, an increase of \$238.6 million, or 16.1%, compared to 2017. The increase was primarily due to an increase in sales of broadband services to our consumer and domestic enterprise customers of \$271.0 million and \$28.1 million, respectively, and an increase in hardware sales of \$3.1 million to our international enterprise customers. The increase was partially offset by (i) a decrease of \$32.5 million in residential wholesale broadband services and (ii) decreases in hardware sales of \$22.7 million to our domestic enterprise customers, \$8.4 million to our mobile satellite systems customers and \$5.8 million to our consumer customers.

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

Capital expenditures were \$390.1 million for the year ended December 31, 2018, an increase of \$13.6 million, or 3.6%, compared to 2017, primarily due to increases in capital expenditures relating to the Telesat T19V satellite and our enterprise business of \$31.3 million. The increases were partially offset by a decrease of \$17.8 million in capital expenditures mainly associated with satellite ground facilities.

EBITDA was \$601.3 million for the year ended December 31, 2018, an increase of \$126.1 million, or 26.5%, compared to 2017 as set forth in the following table:

	<u>Amounts</u>
EBITDA for the year ended December 31, 2017	\$ 475,222
Increase (decrease) in operating income, including depreciation and amortization	83,596
Increase (decrease) in depreciation and amortization	51,802
Increase (decrease) in gains on investments, net	1,545
Increase (decrease) in other, net	694
Decrease (increase) in net income attributable to non-controlling interests	(260)
Decrease (increase) in foreign currency transaction losses, net	(11,280)
EBITDA for the year ended December 31, 2018	<u>\$ 601,319</u>

ESS Segment

	<u>For the years ended December 31,</u>		<u>Variance</u>	
	<u>2018</u>	<u>2017</u>	<u>Amount</u>	<u>%</u>
Total revenue	\$ 27,231	\$ 30,417	\$ (3,186)	(10.5)
Capital expenditures	(76,757)	20,026	(96,783)	*
EBITDA	17,764	16,074	1,690	10.5

* Percentage is not meaningful

Total revenue was \$27.2 million for the year ended December 31, 2018, a decrease of \$3.2 million, or 10.5%, compared to 2017. The decrease was a result of a decrease in satellite capacity leased to DISH Network on the EchoStar IX satellite.

Capital expenditures were a net reimbursement of \$76.8 million for the year ended December 31, 2018, a decrease in net capital expenditures of \$96.8 million compared to 2017, primarily attributable to a reimbursement of \$77.5 million in 2018 and a decrease in satellite expenditure as a result of the EchoStar 105/SES-11 satellite that was placed into service in the fourth quarter of 2017.

EBITDA was \$17.8 million for the year ended December 31, 2018, an increase of \$1.7 million, or 10.5%, compared to 2017 as set forth in the following table:

	<u>Amounts</u>
EBITDA for the year ended December 31, 2017	\$ 16,074
Increase (decrease) in depreciation and amortization	7,108
Increase (decrease) in operating income, including depreciation and amortization	(5,418)
EBITDA for the year ended December 31, 2018	<u>\$ 17,764</u>

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

Corporate and Other

	For the years ended December 31,		Variance	
	2018	2017	Amount	%
Total revenue	\$ 18,879	\$ 16,820	\$ 2,059	12.2
Capital expenditures	164,091	169,157	(5,066)	(3.0)
EBITDA	(150,582)	1,008	(151,590)	*

* Percentage is not meaningful

Capital expenditures were \$164.1 million for the year ended December 31, 2018, a decrease of \$5.1 million, or 3.0%, compared to 2017, primarily related to increases of \$44.5 million in satellite expenditures on the EchoStar XXIV satellite, primarily offset by decreases of \$37.6 million in satellite expenditures on the EchoStar XIX satellite and the EchoStar XXI satellite. The EchoStar XIX satellite and the EchoStar XXI satellite were placed into service in 2017 and the EchoStar XIX satellite was contributed to the Hughes segment in the first quarter of 2017. The EchoStar XXIV satellite is primarily intended to provide additional capacity for our HughesNet service in North, South and Central American countries.

EBITDA was a loss of \$150.6 million for the year ended December 31, 2018, compared to EBITDA of \$1.0 million for the year ended December 31, 2017, a decrease of \$151.6 million, as set forth in the following table:

	Amounts	
EBITDA for the year ended December 31, 2017	\$	1,008
Increase (decrease) in depreciation and amortization		12,548
Increase (decrease) in other, net		5,191
Decrease (increase) in net income attributable to non-controlling interests		(655)
Decrease (increase) in foreign currency transaction losses, net		(5,524)
Increase (decrease) in equity in earnings of unconsolidated affiliates, net		(22,927)
Increase (decrease) in gains on investments, net		(67,619)
Increase (decrease) in operating income, including depreciation and amortization		(72,604)
EBITDA for the year ended December 31, 2018	\$	(150,582)

LIQUIDITY AND CAPITAL RESOURCES

Cash, Cash Equivalents and Current Marketable Investment Securities

We consider all liquid investments purchased with an original maturity of 90 days or less to be cash equivalents. See Item 7A. Quantitative and Qualitative Disclosures about Market Risk in this Form 10-K for further discussion regarding our marketable investment securities.

As of December 31, 2019 and 2018, our cash, cash equivalents and current marketable investment securities, totaled \$2.5 billion and \$3.2 billion, respectively.

As of December 31, 2019 and 2018, we held \$940.6 million and \$2.3 billion, respectively, of marketable investment securities, consisting of various debt and equity instruments including corporate bonds, corporate equity securities, government bonds and mutual funds.

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

The following discussion highlights our cash flow activities, which include results from continuing and discontinued operations, for the years ended December 31, 2019, 2018 and 2017.

Cash flows from operating activities. We typically reinvest the cash flow from operating activities in our business. For the years ended December 31, 2019, 2018 and 2017, we reported net cash inflows from operating activities of \$656.3 million, \$734.5 million and \$726.9 million, respectively.

For the year ended December 31, 2019, we reported net cash inflows from operating activities of \$656.3 million, a decrease of \$78.2 million, compared to 2018. The decrease in cash inflows was primarily attributable to lower net income of \$141.1 million adjusted to exclude: (i) *Depreciation and amortization*; (ii) *Impairment of long-lived assets*; (iii) *Losses (gains) on investments, net*; (iv) *Equity in earnings of unconsolidated affiliates, net*; (v) *Foreign currency transaction (gains) losses, net*; (vi) *Dividend received from unconsolidated entity*; and (vii) change in *Other, net*.

For the year ended December 31, 2018, we reported net cash inflows from operating activities of \$734.5 million, an increase of \$7.6 million compared to 2017. The increase in cash inflows was primarily attributable to a higher net income of \$80.7 million adjusted to exclude: (i) *Depreciation and amortization*; (ii) *Impairment of long-lived assets*; (iii) *Losses (gains) on investments, net*; (iv) *Foreign currency transaction (gains) losses, net*; (v) *Equity in earnings of unconsolidated affiliates, net*; (vi) *Proceeds from sale of trading securities*; (vii) *Dividend received from unconsolidated entity*; (viii) *Deferred tax provision (benefit), net*; and (ix) changes in *Other, net*. The increase in cash inflows was partially offset by a decrease in cash outflows of \$73.1 million resulting from timing differences in operating assets and liabilities.

Cash flows from investing activities. Our investing activities generally include purchases and sales of marketable investment securities, capital expenditures, acquisitions and strategic investments. For the years ended December 31, 2019, 2018 and 2017, we reported net cash inflows from investing activities of \$822.0 million, net cash outflows from investing activities \$2.1 billion and net cash outflows from investing activities \$867.9 million, respectively.

For the year ended December 31, 2019, we had net sales and maturities of marketable investment securities of \$2.4 billion, partially offset by net purchases of marketable investment securities of \$993.4 million, expenditures for property and equipment of \$418.6 million, and purchase of other investments of \$93.7 million.

For the year ended December 31, 2018, we had net purchases of marketable investment securities of \$2.97 billion, expenditures for property and equipment of \$555.1 million and investments in unconsolidated affiliates of \$116.0 million, partially offset by net sales and maturities of marketable investment securities of \$1.5 billion, and a reimbursement of \$77.5 million related to the EchoStar 105/SES-11 satellite.

For the year ended December 31, 2017, we had net purchases of marketable investment securities of \$855.7 million and expenditures for property and equipment of \$583.2 million, partially offset by net sales and maturities of marketable investment securities of \$580.2 million and the sale of our investment in Invidi to an entity owned in part by DISH Network of \$17.8 million.

Cash flows from financing activities. Our financing activities generally include proceeds related to the issuance of debt and cash used for the repurchase, redemption or payment of debt and finance lease obligations, payments relating to stock and debt repurchases and the proceeds from Class A common stock options exercised and stock issued under our stock incentive plans and employee stock purchase plan. For the years ended December 31, 2019, 2018 and 2017, we reported net cash outflows from financing activities of \$885.3 million, net cash outflows from financing activities of \$136.6 million, and net cash inflows from financing activities of \$0.1 million, respectively.

For the year ended December 31, 2019, we reported net cash outflows from financing activities of \$885.3 million, an increase of \$748.7 million compared to 2018. Net cash outflows for the year ended December 31, 2019 included \$920.9 million for the repurchasing and maturity of debt and \$7.3 million for the purchase of non-controlling shareholder interests in a subsidiary of ours that were held by an unaffiliated third party. These transactions did not occur during the year ended December 31, 2018. Additionally, during the year ended December 31, 2019, we received \$67.3 million in net proceeds from Class A common stock options exercised in 2019 compared to \$4.4 million during the year ended December 31, 2018. The change in net cash outflows was partially offset by our repurchase of \$33.3 million of shares of our Class A common stock during the year ended December 31, 2018.

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

For the year ended December 31, 2018, we reported net cash outflows from financing activities of \$136.6 million, an increase in cash outflows of \$136.6 million compared to 2017. The increase in cash outflows of was primarily due to our repurchase of \$69.2 million of debt, our repurchase of \$33.3 million of shares of our Class A common stock, and a decrease of \$31.1 million in net proceeds from Class A common stock options exercised under our stock incentive plans in 2018.

Obligations and Future Capital Requirements
Contractual Obligations

The following table summarizes our contractual obligations as of December 31, 2019:

	Payments Due in the Year Ending December 31,						
	Total	2020	2021	2022	2023	2024	Thereafter
Long-term debt	\$ 2,400,000	\$ —	\$ 900,000	\$ —	\$ —	\$ —	\$ 1,500,000
Finance lease obligations	1,212	629	487	96	—	—	—
Interest on long-term debt	726,377	157,688	123,375	89,063	89,063	89,063	178,125
Satellite-related obligations	419,033	192,869	31,036	18,479	18,004	17,620	141,025
Operating lease obligations	152,722	20,884	17,648	15,384	14,373	13,286	71,147
Total	\$ 3,699,344	\$ 372,070	\$ 1,072,546	\$ 123,022	\$ 121,440	\$ 119,969	\$ 1,890,297

The table above does not include amounts related to deferred tax liabilities, unrecognized tax positions and certain other amounts recorded in our non-current liabilities as the timing of any payments is uncertain. The table also excludes long-term deferred revenue and other long-term liabilities that do not require future cash payments. Additionally, our satellite-related obligations primarily include payments pursuant to agreements for the construction of the EchoStar XXIV satellite, payments pursuant to regulatory authorizations, non-lease costs associated with our finance lease satellites, in-orbit incentives relating to certain satellites and commitments for satellite service arrangements.

In certain circumstances, the dates on which we are obligated to pay our contractual obligations could change.

Off-Balance Sheet Arrangements

We generally do not engage in off-balance sheet financing activities or use derivative financial instruments for hedge accounting or speculative purposes.

As of December 31, 2019, we had foreign currency forward contracts with a notional value of \$12.1 million in place to partially mitigate foreign currency exchange risk. From time to time, we may enter into foreign currency forward contracts, or take other measures, to mitigate risks associated with foreign currency denominated assets, liabilities, commitments and anticipated foreign currency transactions.

Letters of Credit

As of December 31, 2019, we had \$36.1 million of letters of credit and insurance bonds. Of this amount, \$9.8 million was secured by restricted cash, \$3.8 million was related to insurance bonds and \$22.5 million was issued under credit arrangements available to our foreign subsidiaries. Certain letters of credit are secured by assets of our foreign subsidiaries.

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

Satellites

As our satellite fleet ages, we will be required to evaluate replacement alternatives such as acquiring, leasing or constructing additional satellites, with or without customer commitments for capacity. We may also construct, acquire or lease additional satellites in the future to provide satellite services at additional orbital locations or to improve the quality of our satellite services.

Satellite Insurance

We generally do not carry in-orbit insurance on our satellites because we have assessed that the cost of insurance is not economical relative to the risk of failures. Therefore, we generally bear the risk of any in-orbit failures. Pursuant to the terms of the agreements governing certain portions of our indebtedness and our joint venture agreements with Yahsat, we are required, subject to certain limitations on coverage, to maintain only for the SPACEWAY 3 satellite, the EchoStar XVII satellite and the Al Yah 3 Brazilian payload, insurance or other contractual arrangements during the commercial in-orbit service of such satellite. We were previously required to maintain similar insurance or other contractual arrangements for the EchoStar XVI satellite, which we transferred to DISH Network pursuant to the BSS Transaction. Our other satellites and payloads, either in orbit or under construction, are not covered by launch or in-orbit insurance or other contractual arrangements. We will continue to assess circumstances going forward and make insurance-related decisions on a case-by-case basis.

Future Capital Requirements

We primarily rely on our existing cash and marketable investment securities balances, as well as cash flow generated through our operations to fund our business. We no longer generate cash flows from our former BSS Business, which comprised a substantial portion of our ESS segment prior to the BSS Transaction. Revenue in our ESS segment depends largely on our ability to continuously make use of our available satellite capacity with existing customers and our ability to enter into commercial relationships with new customers. Consumer revenue in our Hughes segment depends on our success in adding new and retaining existing subscribers and driving higher average revenue per subscriber across our wholesale and retail channels. Revenue in our enterprise and equipment businesses relies heavily on global economic conditions and the competitive landscape for pricing relative to competitors and alternative technologies. Service costs related to ongoing support of our direct and indirect customers and partners are typically impacted most significantly by our growth. There can be no assurance that we will have positive cash flows from operations. Furthermore, if we experience negative cash flows, our existing cash and marketable investment securities balances may be reduced.

We have a significant amount of outstanding indebtedness. As of December 31, 2019, our total indebtedness was \$2.4 billion, of which \$1.1 billion related to finance lease obligations. In June 2019, we repurchased the outstanding principal of the 2019 Senior Secured Notes at maturity. Our liquidity requirements will be continue to be significant, primarily due to our remaining debt service requirements and the design and construction of our new EchoStar XXIV satellite. We may from time to time seek to purchase amounts of our outstanding debt in open market purchases, privately negotiated transactions or otherwise, depending on market conditions, our liquidity needs and other factors. The amounts we may repurchase may be material.

In addition, our future capital expenditures are likely to increase if we make acquisitions or additional investments in infrastructure or joint ventures to support and expand our business, or if we decide to purchase or build one or more additional satellites. Other aspects of our business operations may also require additional capital. We also expect to owe U.S. Federal income tax for 2020.

We anticipate that our existing cash and marketable investment securities are sufficient to fund the currently anticipated operations of our business through the next twelve months.

Stock Repurchases

Our Board of Directors previously authorized stock repurchases of up to \$500 million of our Class A common stock through and including December 31, 2019. On October 29, 2019, our Board of Directors terminated its prior authorization and authorized us to repurchase under this authorization up to \$500.0 million of our Class A common

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

stock through and including December 31, 2020. For the year ended December 31, 2018, we repurchased 952,603 shares of our common stock at an average price per share of \$34.95 for a total purchase price of \$33.3 million. For the years ended December 31, 2019 and 2017, we did not repurchase any common stock under this program.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of our Accompanying Consolidated Financial Statements in conformity with U.S. GAAP requires us to make certain estimates, judgments and assumptions that affect the reported amounts of assets and liabilities at the date of the balance sheets, the reported amounts of revenue and expenses for each reporting period, and certain information disclosed in our Accompanying Consolidated Financial Statements. We base our estimates, judgments and assumptions on historical experience and on various other factors that we believe to be relevant under the circumstances. Actual results may differ from previously estimated amounts, and such differences may be material to our Accompanying Consolidated Financial Statements. We review our estimates and assumptions periodically, and the effects of revisions are reflected in the period they occur or prospectively if the revised estimate affects future periods. 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 our Accompanying Consolidated Financial Statements.

Contingent Liabilities

We record an accrual for litigation and other loss contingencies when we determine that a loss is probable and the amount of the loss can be reasonably estimated. Legal fees and other costs of defending legal proceedings are charged to expense as incurred. A significant amount of management judgment is required in determining whether an accrual should be recorded for a loss contingency and the amount of such accrual. Estimates generally are developed in consultation with legal counsel and are based on an analysis of potential outcomes. Due to the inherent uncertainty in determining the likelihood of potential outcomes and the potential financial statement impact of such outcomes, it is possible that upon further development or resolution of a contingent matter, charges related to existing loss contingencies could be recorded in future periods, which could be material to our consolidated results of operations and financial position.

Revenue Recognition

Our Hughes segment enters into contracts to design, develop and deliver telecommunication networks to customers in our enterprise and mobile satellite systems markets. Those contracts require significant effort to develop and construct the network over an extended time period. Revenue from such contracts is recognized over time using an appropriate method to measure progress toward completion. Depending on the nature of the arrangement, we measure progress toward completion using the cost-to-cost input method or the units-of-delivery output method. Under the cost-to-cost method, revenue reflects the ratio of costs incurred to estimated total costs at completion. Under the units-of-delivery method, revenue and related costs are recognized as products are delivered based on the expected profit for the entire agreement. Profit margins on long-term contracts are based on estimates of total revenue and costs at completion. We review and revise our estimates periodically and recognize related adjustments in the period in which the revisions are made. Estimated losses on contracts are recorded in the period in which they are identified. Changes in our periodic estimates for these contracts could result in significant adjustments to our revenue or costs, which could be material to our consolidated results of operations.

In addition, some of our contracts with customers include leased equipment. These contracts are reviewed to assess whether they meet the definition of a lease, including determination of the proper revenue classification. Lease revenue is recognized either over time for operating leases or when the leased asset is de-recognized for sales-type leases.

Impairment of Assets*Impairment of long-lived assets*

We evaluate our long-lived assets other than goodwill and intangible assets with indefinite lives for impairment whenever events and changes in circumstances indicate that their carrying amounts may not be recoverable. The carrying amount of a long-lived asset or asset group is considered to not be recoverable when the estimated future undiscounted

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

cash flows from such asset or asset group is less than its carrying amount. In that event, an impairment loss is recorded in the determination of operating income based on the amount by which the carrying amount exceeds the estimated fair value of the long-lived asset or asset group. Fair value is determined primarily using discounted cash flow techniques reflecting the estimated cash flows and discount rate that would be assumed by a market participant for the asset or asset group under review. Our discounted cash flow estimates typically include assumptions based on unobservable inputs and may reflect probability-weighting of alternative scenarios. Estimated losses on long-lived assets to be disposed of by sale may be determined in a similar manner, except that fair value estimates are reduced for estimated selling costs. Changes in estimates of future cash flows, discount rates and other assumptions could result in recognition of additional impairment losses in future periods.

We evaluate goodwill and intangible assets with indefinite lives for impairment on an annual basis or whenever events and changes in circumstances indicate the carrying amounts may not be recoverable. Our impairment assessment typically begins with a qualitative assessment to determine whether it is more likely than not the fair value of the indefinite lived asset or reporting unit is less than its carrying amount. The qualitative assessment requires us to make estimates and assumptions based on historical experience and in certain cases based on unobservable inputs and management estimates of future performance. If an event occurs that causes us to recognize an impairment charge, it would impact our reported earnings on the period that such charge occurs.

Impairment of investments

We periodically evaluate all of our investments to determine whether events or changes in circumstances have occurred that may have a significant adverse effect on the fair value of the investment and/or if there has been observable price changes in orderly transactions for identical or similar securities of the same issuer. We consider information if provided to us by our investees such as current financial statements, business plans, investment documentation, capitalization tables, liquidation waterfalls, and board materials, and we may make additional inquiries of investee management.

Indicators of impairment may include, but are not limited to, unprofitable operations, material loss contingencies, changes in business strategy, changes in the investees' enterprise value and changes in the investees' investment pricing. When we determine that one of our other investments is impaired we reduce its carrying value to its estimated fair value and recognize the impairment loss. Additionally, when there has been an observable price change to a cost method investment, we adjust the carrying amount of the investment to its then estimated fair value and recognize the investment gain or loss.

NEW ACCOUNTING PRONOUNCEMENTS

For a discussion of new accounting pronouncements, see Note 2 in our Accompanying Consolidated Financial Statements. We are continuing to assess the impact of adopting certain recently issued accounting pronouncements on our Accompanying Consolidated Financial Statements and related disclosures.

SEASONALITY

For our Hughes segment, service revenue is generally not impacted by seasonal fluctuations other than those associated with fluctuations related to sales and promotional activities. However, like many communications infrastructure equipment vendors, a higher amount of our hardware revenue occurs in the second half of the year due to our customers' annual procurement and budget cycles. Large enterprises and operators often allocate their capital expenditure budgets at the beginning of their fiscal year (which often coincides with the calendar year). The typical sales cycle for large complex system procurements is six to 12 months, which often results in the customer expenditure occurring towards the end of the year. Customers often seek to expend the budgeted funds prior to the end of the year and the next budget cycle.

Our ESS segment is not generally affected by seasonal impacts.

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

INFLATION

Inflation has not materially affected our operations during the past three years. We believe that our ability to increase the prices charged for our products and services in future periods will depend primarily on competitive pressures or contractual terms.

EXPLANATION OF KEY METRICS AND OTHER ITEMS

Services and other revenue. Services and other revenue primarily includes the sales of consumer and enterprise broadband services, maintenance and other contracted services, revenue associated with satellite and transponder leases and services, satellite uplinking/downlinking, subscriber wholesale service fees for the HughesNet service professional services and facilities rental revenue.

Equipment revenue. Equipment revenue primarily includes broadband equipment and networks sold to customers in our consumer and enterprise markets.

Cost of sales - services and other. Cost of sales - services and other primarily includes the cost of broadband services provided to our consumer and enterprise customers, maintenance and other contracted services, costs associated with satellite and transponder leases and services, professional services and facilities rental.

Cost of sales - equipment. Cost of sales - equipment consists primarily of the cost of broadband equipment and networks sold to customers in our consumer and enterprise markets. It also includes certain other costs associated with the deployment of equipment to our customers.

Selling, general and administrative expenses. Selling, general and administrative expenses primarily includes selling and marketing costs and employee-related costs associated with administrative services (e.g., information systems, human resources and other services), including stock-based compensation expense. It also includes professional fees (e.g. legal, information systems and accounting services) and other expenses associated with facilities and administrative services.

Research and development expenses. Research and development expenses primarily includes costs associated with the design and development of products to support future growth and provide new technology and innovation to our customers.

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

Interest income. Interest income primarily includes interest earned on our cash, cash equivalents and marketable investment securities, and other investments including premium amortization and discount accretion on debt securities.

Interest expense, net of amounts capitalized. Interest expense, net of amounts capitalized primarily includes interest expense associated with our debt and finance lease obligations (net of capitalized interest), amortization of debt issuance costs and interest expense related to certain legal proceedings.

Gains (losses) on investments, net. Gains (losses) on investments, net primarily includes changes in fair value of our marketable equity securities and other investments for which we have elected the fair value option. It may also include realized gains and losses on the sale or exchange of our available-for-sale debt securities, other-than-temporary impairment losses on our available-for-sale securities, realized gains and losses on the sale or exchange of equity securities and debt securities without readily determinable fair value and adjustments to the carrying amount of investments in unconsolidated affiliates and marketable equity securities resulting from impairments and observable price changes.

Equity in earnings (losses) of unconsolidated affiliates, net. Equity in earnings (losses) of unconsolidated affiliates, net includes earnings or losses from our investments accounted for using the equity method.

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

Foreign currency transaction gains (losses), net. Foreign currency transaction gains (losses), net include gains and losses resulting from the re-measurement of transactions denominated in foreign currencies.

Other, net. Other, net primarily includes dividends received from our marketable investment securities and other non-operating income and expense items that are not appropriately classified elsewhere in the Consolidated Statements of Operations in our Accompanying Consolidated Financial Statements.

Net income (loss) from discontinued operations. Net income (loss) from discontinued operations includes the financial results of the BSS Business transferred in the BSS Transaction, except for certain real estate that transferred in the transaction, and the EchoStar Technologies businesses and certain other assets transferred to DISH Network pursuant to the Share Exchange.

Earnings before interest, taxes, depreciation and amortization ("EBITDA"). EBITDA is defined as Net income (loss) excluding Interest income and expense, net, Income tax benefit (provision), net, Depreciation and amortization, Net income (loss) from discontinued operations and Net income (loss) attributable to non-controlling interests. EBITDA is not a measure determined in accordance with U.S. GAAP. This non-GAAP measure is reconciled to Net income (loss) in our discussion of Results of Operations above. EBITDA should not be considered in isolation or as a substitute for operating income, net income or any other measure determined in accordance with U.S. GAAP. EBITDA is used by our management as a measure of operating efficiency and overall financial performance for benchmarking against our peers and competitors. Management believes EBITDA provides meaningful supplemental information regarding the underlying operating performance of our business and is appropriate to enhance an overall understanding of our financial performance. Management also believes that EBITDA is useful to investors because it is frequently used by securities analysts, investors and other interested parties to evaluate the performance of companies in our industry.

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

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risks Associated with Financial Instruments and Foreign Currency

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

Cash, Cash Equivalents and Current Marketable Investment Securities

As of December 31, 2019, our cash, cash equivalents and current marketable investment securities had a fair value of \$2.5 billion. Of this amount, a total of \$2.4 billion was invested in: (a) cash; (b) 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; (c) debt instruments of the United States ("U.S.") government and its agencies; and/or (d) 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, fund operations, make strategic investments and expand the business. Consequently, the size of this portfolio fluctuates significantly as cash is received and used in our business. The value of this portfolio may be 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 not affect the fair value of our cash, or materially affect the fair value of our cash equivalents due to their maturities of less than 90 days. A change in interest rates would affect the fair value of our current marketable debt securities portfolio; however, we normally hold these investments to maturity. Based on our cash, cash equivalents and current marketable debt securities investment portfolio of \$2.4 billion as of December 31, 2019, a hypothetical 10% change in average interest rates during 2019 would not have had a material impact on the fair value of our cash, cash equivalents and debt securities portfolio due to the limited duration of our investments.

Our cash, cash equivalents and current marketable debt securities had an average annual rate of return for the year ended December 31, 2019 of 2.72%. 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 2019 would have resulted in a decrease of \$7.5 million in annual interest income.

Strategic Marketable Investment Securities

As of December 31, 2019, we held investments in the publicly traded securities of several companies with a fair value of \$35.6 million. These investments, which are held for strategic and financial purposes, are concentrated in a small number of companies, are highly speculative and have historically experienced, and continue to experience volatility. The fair value of these investments are subject to significant fluctuations in fair value and can be significantly impacted by the risk of adverse changes in securities markets generally, as well as risks related to the performance of the companies whose securities we have invested in, risks associated with specific industries and other factors. In general, our strategic marketable investment securities portfolio is not significantly impacted by interest rate fluctuations as it currently consists primarily of equity securities, the value of which is more closely related to factors specific to the underlying business. A hypothetical 10% adverse change in the market price of our public strategic equity investments during 2019 would have resulted in a decrease of \$3.6 million in the fair value of these investments.

Other Investments

As of December 31, 2019, we had \$159.2 million of other equity investments and other debt investments of privately held companies that we hold for strategic business purposes. The fair value of these investments is not readily determinable. We periodically review these investments and may adjust the carrying amount to their estimated fair value when there are indications of impairment, observable price changes for the investments or observable transactions of the same investments. A hypothetical adverse change equal to 10% of the carrying amount of these equity instruments during 2019 would have resulted in a decrease of \$15.9 million in the value of these investments.

Our ability to realize value from our strategic investments in companies that are privately held depends on the success of those companies' businesses and their ability to obtain sufficient capital 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 sell them, we will not be able to recover our investment.

Foreign Currency Exchange Risk

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

Our objective in managing our exposure to foreign currency changes is to reduce earnings and cash flow volatility associated with foreign currency exchange rate fluctuations, primarily resulting from loans to foreign subsidiaries in U.S. dollars. Accordingly, we may enter into foreign currency forward contracts, or take other measures, to mitigate risks associated with foreign currency denominated assets, liabilities, commitments and anticipated foreign currency transactions. As of December 31, 2019, we had foreign currency forward contracts with a notional value of \$12.1 million in place to partially mitigate foreign currency exchange risk. The estimated fair values of the foreign currency contracts were not material as of December 31, 2019. The impact of a hypothetical 10% adverse change in exchange rates on the carrying amount of the net assets and liabilities of our foreign subsidiaries during 2019 would have been an estimated loss to the cumulative translation adjustment of \$44.6 million as of December 31, 2019.

Derivative Financial Instruments

We generally do not use derivative financial instruments for speculative purposes and we generally do not apply hedge accounting treatment to our derivative financial instruments. We evaluate our derivative financial instruments from time to time but there can be no assurance that we will not enter into additional foreign currency forward contracts, or take other measures, in the future to mitigate our foreign currency exchange risk.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Our Accompanying Consolidated Financial Statements are included in Item 15 of this Form 10-K.

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) and Rule 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) as of the end of the period covered by this Form 10-K. 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 Form 10-K such that the information required to be disclosed in our Securities and Exchange Commission reports is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms, and is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

In November 2019, we consummated our joint venture with Yahsat in Brazil. As a result of the transaction, we are reviewing the internal controls of the business we acquired from Yahsat in the transaction and we may make appropriate changes as deemed necessary.

Changes in Internal Control Over Financial Reporting

Except as noted above, there has been no change in our internal control over financial reporting (as defined in Rule 13a-15(f) and Rule 15d-15(f) under the Exchange Act) that occurred during the three months ended December 31, 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. We continue to review our internal control over financial reporting, and may from time to time make changes aimed at enhancing its effectiveness and to ensure that our systems evolve with our business.

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 generally accepted accounting principles in the United States.

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 in the United States, 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. Based on this evaluation, our management has concluded that our internal control over financial reporting was effective as of December 31, 2019. Management's assessment of our internal control over financial reporting did not include the internal controls of the business we acquired from Yahsat in Brazil in November 2019. The amount of total assets and revenue acquired that is included in our Accompanying Consolidated Financial Statements as of and for the year ended December 31, 2019 was \$108.6 million and \$0.8 million, respectively.

The effectiveness of our internal control over financial reporting as of December 31, 2019 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 Form 10-K.

ITEM 9B. OTHER INFORMATION

Financial Results

On February 20, 2020, we issued a press release (the "Press Release") announcing our financial results for the quarter and year ended December 31, 2019 and a supplemental investor information presentation (the "Presentation") providing unaudited pro forma financial information. A copy of the Press Release and Presentation are furnished herewith as Exhibit 99.1 and Exhibit 99.2, respectively. The foregoing information, including the exhibit related thereto, is furnished in response to Item 2.02 of Form 8-K and shall not be deemed "filed" for the purposes of Section 18 of the Exchange Act, or otherwise, and shall not be incorporated by reference into any registration statement or other document pursuant to the Securities Act of 1933, as amended, or into any filing or other document pursuant to the Exchange Act, except as otherwise expressly stated in any such filing.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item with respect to the identity and business experience of our directors and corporate governance will be set forth in our Proxy Statement for the 2020 Annual Meeting of Shareholders, which will be filed no later than 120 days after December 31, 2019, under the caption "Election of Directors," 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 in Part I of this Form 10-K under the caption Item 1. Business — Information about our Executive Officers.

The information required by this Item with respect to our code of ethics is contained in Part I of this Form 10-K under the caption Item 1. Business — Website Access.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item will be set forth in our Proxy Statement for the 2020 Annual Meeting of Shareholders, which will be filed no later than 120 days after December 31, 2019, under the caption "Executive Compensation and Other Information," 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 2020 Annual Meeting of Shareholders, which will be filed no later than 120 days after December 31, 2019, under the captions "Election of Directors," "Equity Security Ownership" and "Equity Compensation Plan Information," 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 2020 Annual Meeting of Shareholders, which will be filed no later than 120 days after December 31, 2019, under the caption "Certain Relationships and Related Party Transactions," 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 2020 Annual Meeting of Shareholders, which will be filed no later than 120 days after December 31, 2019, under the caption "Principal Accountant Fees and Services," which information is hereby incorporated herein by reference.

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

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

	<u>Page</u>
(1) Consolidated Financial Statements	
Index to Consolidated Financial Statements	F-1
Report of Independent Registered Public Accounting Firm	F-2
Consolidated Balance Sheets as of December 31, 2019 and 2018	F-5
Consolidated Statements of Operations for the years ended December 31, 2019, 2018 and 2017	F-7
Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2019, 2018 and 2017	F-8
Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2019, 2018 and 2017	F-9
Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018 and 2017	F-10
Notes to Consolidated Financial Statements	F-12
(2) Exhibits	
2.1* Form of Separation Agreement between EchoStar Corporation and DISH Network Corporation (incorporated by reference to Exhibit 2.1 to Amendment No. 1 of EchoStar Corporation's Form 10 filed December 12, 2007, Commission File No. 001-33807).	
2.2* Agreement and Plan of Merger between EchoStar Corporation, EchoStar Satellite Services L.L.C., Broadband Acquisition Corporation and Hughes Communications, Inc. dated as of February 13, 2011 (incorporated by reference to Exhibit 2.1 to Hughes Communications Inc.'s Current Report on Form 8-K, filed February 15, 2011, Commission File No. 1-33040). ****	
2.3* Master Transaction Agreement by and among DISH Network Corporation, BSS Merger Sub Inc., EchoStar Corporation, and EchoStar BSS Corporation, dated as of May 19, 2019 (incorporated by reference to Exhibit 2.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 001-33807)****	
3.1* Articles of Incorporation of EchoStar Corporation (incorporated by reference to Exhibit 3.1 to Amendment No. 1 of EchoStar Corporation's Form 10 filed December 12, 2007, Commission File No. 001-33807).	
3.2* Amendment to the Articles of Incorporation of EchoStar Corporation (incorporated by reference to Exhibit 3.1 to EchoStar Corporation's Current Report on Form 8-K filed January 25, 2008, Commission File No. 001-33807).	
3.3* Certificate of Amendment to Articles of Incorporation of EchoStar Corporation, dated as of May 4, 2016 (incorporated by reference to Exhibit 3.1 to EchoStar Corporation's Current Report on Form 8-K, filed May 5, 2016, Commission File No. 001-33807).	
3.4* Certificate of Withdrawal of Certificate of Designation of EchoStar Corporation (incorporated by reference to Exhibit 31 to EchoStar Corporation's Current Report on Form 8-K, filed March 6, 2017, Commission File No. 001-33807).	
3.5* Bylaws of EchoStar Corporation (incorporated by reference to Exhibit 3.2 to Amendment No. 1 of EchoStar Corporation's Form 10 filed December 12, 2007, Commission File No. 001-33807).	

4.1*	Specimen Class A Common Stock Certificate of EchoStar Corporation (incorporated by reference to Exhibit 4.1 to Amendment No. 1 of EchoStar Corporation's Form 10 filed December 12, 2007, Commission File No. 001-33807).
4.2*	Indenture relating to the EH Holding Corporation (currently known as Hughes Satellite Systems Corporation) 7.5/8% Senior Unsecured Notes due 2021, dated as of June 1, 2011, by and among EH Holding Corporation, the guarantors listed on the signature page thereto, and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.2 to EchoStar Corporation's Current Report on Form 8-K filed June 2, 2011, Commission File No. 001-33807).
4.3*	Supplemental Indenture relating to the 7.5/8% Senior Unsecured Notes due 2021 of EH Holding Corporation (currently known as Hughes Satellite Systems Corporation), dated as of June 8, 2011, by and among EH Holding Corporation, the guarantors listed on the signature page thereto, and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.3 to EchoStar Corporation's Current Report on Form 8-K filed June 9, 2011, Commission File No. 001-33807).
4.4*	Registration Rights Agreement, dated as of June 1, 2011, among EH Holding Corporation (currently known as Hughes Satellite Systems Corporation), the guarantors listed on the signature page thereto and Deutsche Bank Securities Inc. (incorporated by reference to Exhibit 4.3 to EchoStar Corporation's Current Report on Form 8-K filed June 2, 2011, Commission File No. 001-33807).
4.5*	Security Agreement, dated as of June 8, 2011, among EH Holding Corporation (currently known as Hughes Satellite Systems Corporation), the guarantors listed on the signature pages thereto, and U.S. Bank National Association, as successor collateral agent (incorporated by reference to Exhibit 4.1 to EchoStar Corporation's Current Report on Form 8-K filed June 9, 2011, Commission File No. 001-33807).
4.6*	Second Supplemental Indenture relating to the 7.5/8% Senior Unsecured Notes due 2021 of Hughes Satellite Systems Corporation, dated as of March 28, 2014, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantors listed on the signature pages thereto, and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.2 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2014, filed May 9, 2014, Commission File No. 001-33807).
4.7*	Form of Note for 7.5/8% Senior Unsecured Notes due 2021 (included as part of Exhibit 4.3).
4.8*	Indenture, relating to the 5.250% Senior Secured Notes, dated as of July 27, 2016, among Hughes Satellite Systems Corporation, the guarantors party thereto, U.S. Bank National Association, as trustee and successor collateral agent (incorporated by reference to Exhibit 4.1 to EchoStar Corporation's Current Report on Form 8-K filed on July 27, 2016, Commission File No. 001-33807).
4.9*	Indenture, relating to the 6.625% Senior Unsecured Notes, dated as of July 27, 2016, among Hughes Satellite Systems Corporation, the guarantors party thereto and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.2 to EchoStar Corporation's Current Report on Form 8-K filed on July 27, 2016, Commission File No. 001-33807).
4.10*	Registration Rights Agreement, dated as of July 27, 2016, among Hughes Satellite Systems Corporation, the guarantors party thereto and Deutsche Bank Securities Inc. (incorporated by reference to Exhibit 4.3 to EchoStar Corporation's Current Report on Form 8-K filed on July 27, 2016, Commission File No. 001-33807).
4.11*	Additional Secured Party Joinder, dated as of July 27, 2016, among U.S. Bank National Association, as trustee and successor collateral agent, and Hughes Satellite Systems Corporation (incorporated by reference to Exhibit 4.4 to EchoStar Corporation's Current Report on Form 8-K filed on July 27, 2016, Commission File No. 001-33807).
4.12*	Form of 5.250% Senior Secured Note due 2026 (included as part of Exhibit 4.13).
4.13*	Form of 6.625% Senior Unsecured Note due 2026 (included as part of Exhibit 4.14).

- [4.14*](#) [Supplemental Indenture relating to Hughes Satellite Systems Corporation's 5.250% Senior Secured Notes due 2026, dated March 23, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto, U.S. Bank National Association, as trustee and successor collateral agent \(incorporated by reference to Exhibit 4.19 to Hughes Satellite Systems Corporation's Registration Statement on Form S-4, filed April 6, 2017, Commission File No. 333-179121\).](#)
- [4.15*](#) [Supplemental Indenture relating to Hughes Satellite Systems Corporation's 6.625% Senior Notes due 2026, dated as of March 23, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto and U.S. Bank National Association, as trustee \(incorporated by reference to Exhibit 4.20 to Hughes Satellite Systems Corporation's Registration Statement on Form S-4, filed April 6, 2017, Commission File No. 333-179121\).](#)
- [4.16*](#) [Third Supplemental Indenture relating to Hughes Satellite Systems Corporation's 7% Senior Notes due 2021, dated March 23, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto and Wells Fargo Bank, National Association, as trustee \(incorporated by reference to Exhibit 4.22 to Hughes Satellite Systems Corporation's Registration Statement on Form S-4, filed April 6, 2017, Commission File No. 333-179121\).](#)
- [4.17*](#) [Joinder Agreement, dated as of August 10, 2017, to the Security Agreement dated as of June 8, 2011, by and between HNS Americas, L.L.C., HNS Americas II, L.L.C. and U.S. Bank National Association, as successor collateral agent \(incorporated by reference to Exhibit 4.24 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, filed February 22, 2018, Commission File No. 001-33807\).](#)
- [4.18*](#) [Second Supplemental Indenture relating to Hughes Satellite Systems Corporation's 5.250% Senior Secured Notes due 2026, dated August 10, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto, U.S. Bank National Association, as trustee and successor collateral agent \(incorporated by reference to Exhibit 4.25 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, filed February 22, 2018, Commission File No. 001-33807\).](#)
- [4.19*](#) [Second Supplemental Indenture relating to Hughes Satellite Systems Corporation's 6.625% Senior Notes due 2026, dated as of August 10, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto and U.S. Bank National Association, as trustee \(incorporated by reference to Exhibit 4.26 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, filed February 22, 2018, Commission File No. 001-33807\).](#)
- [4.20*](#) [Fourth Supplemental Indenture relating to Hughes Satellite Systems Corporation's 7% Senior Notes due 2021, dated August 10, 2017, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantor listed on the signature pages thereto and Wells Fargo Bank, National Association, as trustee \(incorporated by reference to Exhibit 4.28 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2017, filed February 22, 2018, Commission File No. 001-33807\).](#)
- [4.21*](#) [Joinder Agreement, dated as of June 12, 2019, to the Security Agreement dated as of June 8, 2011, by and between EchoStar BSS Corporation, EchoStar FSS L.L.C. and U.S. Bank National Association, as successor collateral agent \(incorporated by reference to Exhibit 4.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 001-33807\).](#)
- [4.22*](#) [Third Supplemental Indenture relating to Hughes Satellite Systems Corporation's 5.250% Senior Secured Notes due 2026, dated June 12, 2019, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantors listed on the signature pages thereto, U.S. Bank National Association, as trustee and successor collateral agent \(incorporated by reference to Exhibit 4.2 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 001-33807\).](#)

4.23*	Third Supplemental Indenture relating to Hughes Satellite Systems Corporation's 6.625% Senior Notes due 2026, dated as of June 12, 2019, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantors listed on the signature pages thereto and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.3 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 001-33807),
4.24*	Fifth Supplemental Indenture relating to Hughes Satellite Systems Corporation's 7% Senior Notes due 2021, dated June 12, 2019, by and among Hughes Satellite Systems Corporation, the guarantors and the supplemental guarantors listed on the signature pages thereto and Wells Fargo Bank, National Association, as trustee (incorporated by reference to Exhibit 4.4 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 001-33807),
4.25(H)	Description of our Capital Stock.
10.1*	Form of Tax Sharing Agreement between EchoStar Corporation and DISH Network Corporation (incorporated by reference to Exhibit 10.2 to Amendment No. 1 of EchoStar Corporation's Form 10 filed December 12, 2007, Commission File No. 001-33807),**
10.2*	Form of EchoStar Corporation 2008 Class B CEO Stock Option Plan (incorporated by reference to Exhibit 10.25 to Amendment No. 1 of EchoStar Corporation's Form 10 filed December 12, 2007, Commission File No. 001-33807),**
10.3*	Amended and Restated EchoStar Corporation 2008 Stock Incentive Plan (the "2008 Stock Incentive Plan") (incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed September 18, 2014, Commission File No. 001-33807),**
10.4*	Amended and Restated EchoStar Corporation 2008 Non-Employee Director Stock Option Plan (the "2008 Non-Employee Director Stock Option Plan") (incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed March 31, 2009, Commission File No. 001-33807),**
10.5*	Allocation Agreement, dated August 4, 2009, between EchoStar Corporation and DISH Network Corporation (incorporated by reference from Exhibit 10.4 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2009, filed November 9, 2009, Commission File No. 001-33807),
10.6*	Employment Agreement, dated as of April 23, 2005 between Hughes Network Systems, LLC and Pradman Kaul (incorporated by reference to Exhibit 10.3 to Hughes Communications Inc.'s Registration Statement on Form S-1, filed December 5, 2005, Commission File No. 333-130136),**
10.7*	Amendment to Employment Agreement, dated as of December 23, 2010 between Hughes Communications, Inc. and Pradman Kaul (incorporated by reference to Exhibit 10.29 to Hughes Communications Inc.'s Annual Report on Form 10-K, filed March 7, 2011, Commission File No. 001-33040),**
10.8*	Amendment to Employment Agreement, dated as of April 1, 2016, between Hughes Communications, Inc. and Pradman Kaul (incorporated by reference to Exhibit 10.1 EchoStar Corporation's Current Report on Form 8-K, filed April 6, 2016, Commission File No. 001-33807),**
10.9*	Form of Restricted Stock Unit Agreement for 2008 Stock Incentive Plan — Executive or Director (incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2015, filed November 6, 2015, Commission File No. 001-33807),**
10.10*	Form of Stock Option Agreement for 2008 Stock Incentive Plan (1999) (incorporated by reference to Exhibit 10.39 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807),**
10.11*	Form of Stock Option Agreement for 2008 Stock Incentive Plan — Employee (2008) (incorporated by reference to Exhibit 10.40 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807),**

- 10.12* [Form of Stock Option Agreement for 2008 Stock Incentive Plan — Executive \(2008\) \(incorporated by reference to Exhibit 10.41 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807\).**](#)
- 10.13* [Form of Stock Option Agreement for 2008 Stock Incentive Plan — Employee \(2014\) \(incorporated by reference to Exhibit 10.42 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807\).**](#)
- 10.14* [Form of Stock Option Agreement for 2008 Stock Incentive Plan — Executive \(2014\) \(incorporated by reference to Exhibit 10.43 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807\). **](#)
- 10.15* [Form of Non-Employee Director Stock Option Agreement for 2008 Non-Employee Director Stock Option Plan \(incorporated by reference to Exhibit 10.44 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807\).**](#)
- 10.16* [Form of Restricted Stock Unit Agreement for 2008 Stock Incentive Plan — Executive or Director \(2011\) \(incorporated by reference to Exhibit 10.45 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2015, filed February 24, 2016, Commission File No. 001-33807\).**](#)
- 10.17* [EchoStar Corporation Executive Officer Bonus Incentive Plan, dated as of May 4, 2016 \(incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Current Report on Form 8-K, filed May 5, 2016, Commission File No. 001-33807\).**](#)
- 10.18* [Share Exchange Agreement among 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., dated as of January 31, 2017 \(incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2017, filed May 10, 2017, Commission File No. 001-33807***\)****](#)
- 10.19* [EchoStar Corporation 2017 Stock Incentive Plan \(incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed March 23, 2017, Commission File No. 001-33807\).**](#)
- 10.20* [EchoStar Corporation 2017 Non-Employee Director Stock Incentive Plan \(incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed March 23, 2017, Commission File No. 001-33807\).**](#)
- 10.21* [Amended and Restated EchoStar Corporation 2017 Employee Stock Purchase Plan \(incorporated by reference to EchoStar Corporation's Definitive Proxy Statement on Form 14, filed March 23, 2017, Commission File No. 001-33807\).**](#)
- 10.22* [EchoStar Non-Qualified Plan -- Executive Plan and Adoption Agreement, as amended \(incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807\).**](#)
- 10.23* [Form of Stock Option Agreement for the EchoStar Corporation 2017 Stock Incentive Plan - Employee \(2017\) \(incorporated by reference to Exhibit 10.2 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807\).**](#)
- 10.24* [Form of Stock Option Agreement for the EchoStar Corporation 2017 Stock Incentive Plan - Executive \(2017\) \(incorporated by reference to Exhibit 10.3 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807\). **](#)
- 10.25* [Form of Non-Employee Director Stock Option Agreement for the EchoStar Corporation 2017 Non-Employee Director Stock Incentive Plan \(incorporated by reference to Exhibit 10.4 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807\).**](#)

10.26*	Form of Restricted Stock Unit Agreement for the EchoStar Corporation 2017 Stock Incentive Plan - Executive (2017), (incorporated by reference to Exhibit 10.5 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, filed August 9, 2017, Commission File No. 001-33807).**
10.27*	Letter Agreement between EchoStar Corporation and DISH Network Corporation, dated August 3, 2018, amending that certain Form of Tax Sharing Agreement between EchoStar Corporation and DISH Network (incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended September 2018, filed November 8, 2018, Commission File No. 001-33807).
10.28*	Amendment to EchoStar Non-Qualified Plan -- Executive Plan and Adoption Agreement, dated November 1, 2018 (incorporated by reference to Exhibit 10.35 to EchoStar Corporation's Annual Report on Form 10-K for the year ended December 31, 2018, filed February 21, 2019, Commission File No. 001-33807).**
10.29*	Amended and Restated EchoStar Corporation Executive Officer Bonus Incentive Plan, dated as of April 30, 2019 (incorporated by reference to Exhibit 10.1 to EchoStar Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2019, filed August 8, 2019, Commission File No. 001-33807).**
10.30(H)	Contract between EchoStar XXIV L.L.C. and Space Systems/Loral, LLC for the Jupiter 3 Satellite programs, dated as April 19, 2017, ********
21(H)	Subsidiaries of EchoStar Corporation.
23(H)	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
24(H)	Powers of Attorney of Charles W. Ergen, R. Stanton Dodge, Anthony M. Federico, Pradman P. Kaul, Jeffrey R. Tarr, C. Michael Schroeder and William David Wade.
99.1(I)	Press release dated February 20, 2020 issued by EchoStar Corporation regarding financial results for the quarter and full year ended December 31, 2019.
99.2(I)	Presentation dated February 20, 2020 issued by EchoStar Corporation regarding unaudited pro forma financial information
31.1(H)	Section 302 Certification of Chief Executive Officer.
31.2(H)	Section 302 Certification of Chief Financial Officer.
32.1(I)	Section 906 Certifications of Chief Executive Officer and Chief Financial Officer.
101.INS	XBRL Instance Document. The instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	XBRL Taxonomy Extension Schema.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase.
101.DEF	XBRL Taxonomy Extension Definition Linkbase.
101.LAB	XBRL Taxonomy Extension Label Linkbase.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase.

(H) Filed herewith.
(I) Furnished herewith.
* Incorporated by reference.
** Constitutes a management contract or compensatory plan or arrangement.
*** Certain portions of the exhibit have been omitted in accordance with the Securities and Exchange Commission's rules and regulations regarding confidential treatment.
**** Schedules and exhibits have been omitted pursuant to Item 601(a)(5) of Regulation S-K. We agree to furnish supplementally to the Securities and Exchange Commission a copy of any omitted schedule or exhibit upon request, subject to our right to request confidential treatment of any requested schedule or exhibit.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

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

ECHOSTAR CORPORATION

By: /s/ David J. Rayner
David J. Rayner
Executive Vice President,
Chief Financial Officer,
Chief Operating Officer, and
Treasurer

Date: February 20, 2020

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/ Michael T. Dugan</u> Michael T. Dugan	Chief Executive Officer, President and Director (Principal Executive Officer)	February 20, 2020
<u>/s/ David J. Rayner</u> David J. Rayner	Executive Vice President, Chief Financial Officer, Chief Operating Officer and Treasurer (Principal Financial and Accounting Officer)	February 20, 2020
* <u>Charles W. Ergen</u>	Chairman	February 20, 2020
* <u>R. Stanton Dodge</u>	Director	February 20, 2020
* <u>Anthony M. Federico</u>	Director	February 20, 2020
* <u>Pradman P. Kaul</u>	Director	February 20, 2020
* <u>Jeffrey R. Tarr</u>	Director	February 20, 2020
* <u>C. Michael Schroeder</u>	Director	February 20, 2020
* <u>William David Wade</u>	Director	February 20, 2020

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

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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
EchoStar Corporation:

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

We have audited the accompanying consolidated balance sheets of EchoStar Corporation and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income (loss), changes in stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes and financial statement schedule II listed in Item 15, (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2019, 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, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, 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, 2019, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

The company entered into an agreement with Al Yah Satellite Communications Company PrJSC (Yahsat) pursuant to which, in November 2019, Yahsat contributed its satellite communications services business in Brazil to one of the Company's Brazilian subsidiaries in exchange for a 20% equity ownership interest in that subsidiary. Management excluded from its assessment of the effectiveness of the Company's internal control over financial reporting as of December 31, 2019 the internal control over financial reporting associated with the \$111.5 million of total assets and \$0.8 million of revenue acquired in the transaction and included in the consolidated financial statements of the Company as of and for the year ended December 31, 2019. Our audit of internal control over financial reporting of the Company also excluded an evaluation of the internal control over financial reporting of the business acquired from Yahsat.

Changes in Accounting Principles

As discussed in Note 2 to the consolidated financial statements, in 2019, the Company has changed its method of accounting for leases due to the adoption of Accounting Standards Update No. 2016-02, Leases as of January 1, 2019. In 2018, the Company has changed its method of accounting for revenue recognition due to the adoption of Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers and changed its method of accounting for marketable investment securities and fair value measurements due to the adoption of Accounting Standards Update No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities.

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 Matters

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 the 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.

Evaluation of the identification of significant non-routine related party transactions with DISH Network Corporation

As discussed in Note 23 to the consolidated financial statements, a substantial majority of the voting power of the shares of both the Company and DISH Network Corporation and subsidiaries (DISH) is owned beneficially by the Chairman of the Company. The Company has engaged, and continues to engage, in routine related party transactions with DISH. Historically, the Company has also had significant non-routine related party transactions with DISH.

We identified the evaluation of the identification of significant non-routine related party transactions with DISH as a critical audit matter. Specifically, there was subjectivity in assessing the sufficiency of the results of the procedures performed to determine such transactions were identified by the Company.

The primary procedures we performed to address this critical audit matter included the following. We tested certain internal controls over the Company's related party process, including controls related to the identification of significant non-routine related party transactions with DISH.

We performed the following procedures to evaluate that the significant non-routine related party transactions with DISH were identified. We read public filings from the Company and DISH and external news for information related to transactions between the Company and DISH. We inspected the Company's minutes from meetings of the Board of Directors. We performed a keyword search on the Company's customer and vendor databases for new relationships with DISH. We read new agreements and contracts with DISH. We inquired of executive officers, key members of the Company, and the Board of Directors regarding related party transactions with

DISH. We read the transcripts to quarterly earnings conference calls for the Company and DISH. In addition, we evaluated the overall sufficiency of audit evidence over the identification of significant non-routine related party transactions with DISH.

/s/ KPMG LLP

We have served as the Company's auditor since 2007.

Denver, Colorado
February 20, 2020

ECHOSTAR CORPORATION
CONSOLIDATED BALANCE SHEETS
(Amounts in thousands, except share and per share amounts)

	As of December 31,	
	2019	2018
Assets		
Current assets:		
Cash and cash equivalents	\$ 1,519,431	\$ 928,306
Marketable investment securities	940,623	2,282,152
Trade accounts receivable and contract assets, net	196,629	201,096
Other current assets	179,531	165,809
Current assets of discontinued operations	—	3,486
Total current assets	<u>2,836,214</u>	<u>3,580,849</u>
Non-current assets:		
Property and equipment, net	2,528,738	2,534,666
Operating lease right-of-use assets	114,042	—
Goodwill	506,953	504,173
Regulatory authorizations, net	478,598	430,039
Other intangible assets, net	29,507	44,231
Other investments, net	325,405	266,513
Other non-current assets, net	334,841	338,390
Non-current assets of discontinued operations	—	962,433
Total non-current assets	<u>4,318,084</u>	<u>5,080,445</u>
Total assets	\$ 7,154,298	\$ 8,661,294
Liabilities and Stockholders' Equity		
Current liabilities:		
Trade accounts payable	\$ 124,080	\$ 121,437
Current portion of long-term debt and finance lease obligations	486	919,582
Contract liabilities	101,060	72,284
Accrued expenses and other current liabilities	270,393	181,698
Current liabilities of discontinued operations	—	50,136
Total current liabilities	<u>496,019</u>	<u>1,345,137</u>
Non-current liabilities:		
Long-term debt and finance lease obligations, net of current portion	2,389,733	2,386,202
Deferred tax liabilities, net	351,692	287,989
Operating lease liabilities	96,941	—
Other non-current liabilities	74,360	80,304
Non-current liabilities of discontinued operations	—	406,188
Total non-current liabilities	<u>2,912,726</u>	<u>3,160,683</u>
Total liabilities	3,408,745	4,505,820

Commitments and contingencies

Stockholders' equity:

Preferred stock, \$0.001 par value, 20,000,000 shares authorized, none issued and outstanding at both December 31, 2019 and 2018	—	—
Common stock, \$0.001 par value, 4,000,000,000 shares authorized:		
Class A common stock, \$0.001 par value, 1,600,000,000 shares authorized, 56,592,251 shares issued and 50,107,330 shares outstanding at December 31, 2019 and 54,142,566 shares issued and 47,657,645 shares outstanding at December 31, 2018	57	54
Class B convertible common stock, \$0.001 par value, 800,000,000 shares authorized, 47,687,039 shares issued and outstanding at both December 31, 2019 and 2018	48	48
Class C convertible common stock, \$0.001 par value, 800,000,000 shares authorized, none issued and outstanding at both December 31, 2019 and 2018	—	—
Class D common stock, \$0.001 par value, 800,000,000 shares authorized, none issued and outstanding at both December 31, 2019 and 2018	—	—
Additional paid-in capital	3,290,483	3,702,522
Accumulated other comprehensive income (loss)	(122,138)	(125,100)
Accumulated earnings (losses)	632,809	694,129
Treasury stock, at cost	(131,454)	(131,454)
Total EchoStar Corporation stockholders' equity	3,669,805	4,140,199
Non-controlling interests	75,748	15,275
Total stockholders' equity	3,745,553	4,155,474
Total liabilities and stockholders' equity	\$ 7,154,298	\$ 8,661,294

The accompanying notes are an integral part of these Consolidated Financial Statements.

ECHOSTAR CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(Amounts in thousands, except per share amounts)

	For the years ended December 31,		
	2019	2018	2017
Revenue:			
Services and other revenue	\$ 1,619,271	\$ 1,557,228	\$ 1,285,666
Equipment revenue	266,810	205,410	239,489
Total revenue	<u>1,886,081</u>	<u>1,762,638</u>	<u>1,525,155</u>
Costs and expenses:			
Cost of sales - services and other (exclusive of depreciation and amortization)	561,353	563,907	500,773
Cost of sales - equipment (exclusive of depreciation and amortization)	226,002	176,600	195,151
Selling, general and administrative expenses	509,145	436,088	370,500
Research and development expenses	25,739	27,570	31,745
Depreciation and amortization	490,765	457,116	385,662
Impairment of long-lived assets	—	65,220	10,762
Total costs and expenses	<u>1,813,004</u>	<u>1,726,501</u>	<u>1,494,593</u>
Operating income (loss)	<u>73,077</u>	<u>36,137</u>	<u>30,562</u>
Other income (expense):			
Interest income	82,352	80,275	44,619
Interest expense, net of amounts capitalized	(251,016)	(219,288)	(184,389)
Gains (losses) on investments, net	28,912	(12,622)	53,453
Equity in earnings (losses) of unconsolidated affiliates, net	(14,734)	(5,954)	16,973
Foreign currency transaction gains (losses), net	(11,590)	(15,583)	1,218
Other, net	(166)	11,249	5,364
Total other income (expense), net	<u>(166,242)</u>	<u>(161,923)</u>	<u>(62,762)</u>
Income (loss) from continuing operations before income taxes	(93,165)	(125,786)	(32,200)
Income tax benefit (provision), net	(20,488)	(6,576)	155,107
Net income (loss) from continuing operations	(113,653)	(132,362)	122,907
Net income (loss) from discontinued operations	39,401	93,729	270,582
Net income (loss)	<u>(74,252)</u>	<u>(38,633)</u>	<u>393,489</u>
Less: Net income (loss) attributable to non-controlling interests	(11,335)	1,842	928
Net income (loss) attributable to EchoStar Corporation	(62,917)	(40,475)	392,561
Less: Net income (loss) attributable to Hughes Retail Preferred Tracking Stock	—	—	(1,209)
Net income (loss) attributable to EchoStar Corporation common stock	<u>\$ (62,917)</u>	<u>\$ (40,475)</u>	<u>\$ 393,770</u>
Earnings (losses) per share - Class A and B common stock:			
Basic earnings (loss) from continuing operations per share	\$ (1.06)	\$ (1.39)	\$ 1.29
Total basic earnings (loss) per share	\$ (0.65)	\$ (0.42)	\$ 4.13
Diluted earnings (loss) from continuing operations per share	\$ (1.06)	\$ (1.39)	\$ 1.27
Total diluted earnings (loss) per share	\$ (0.65)	\$ (0.42)	\$ 4.07

The accompanying notes are an integral part of these Consolidated Financial Statements.

ECHOSTAR CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(Amounts in thousands)

	For the years ended December 31,		
	2019	2018	2017
Net income (loss)	\$ (74,252)	\$ (38,633)	\$ 393,489
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	2,845	(34,399)	16,413
Unrealized gains (losses) on available-for-sale securities	2,571	(962)	(21,987)
Other	1,466	(1,910)	92
Amounts reclassified to net income (loss):			
Foreign currency translation realized on impairment of long lived assets	—	32,136	—
Realized gains on available-for-sale securities	(592)	—	(2,758)
Other-than-temporary impairment loss on available-for-sale securities	—	(278)	3,298
Total other comprehensive income (loss), net of tax	6,290	(5,413)	(4,942)
Comprehensive income (loss)	(67,962)	(44,046)	388,547
Less: Comprehensive income (loss) attributable to non-controlling interests	(8,007)	453	1,337
Comprehensive income (loss) attributable to EchoStar Corporation	\$ (59,955)	\$ (44,499)	\$ 387,210

The accompanying notes are an integral part of these Consolidated Financial Statements.

EHOSTAR CORPORATION
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY
(Amounts in thousands)

	Common Stock	Hughes Retail Preferred Tracking Stock	Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Earnings (Losses)	Treasury Stock, at cost	Non-controlling Interest in HSS Tracking Stock	Non-controlling Interests	Total
Balance, December 31, 2016	\$ 100	\$ 6	\$ 3,828,677	\$ (124,803)	\$ 314,247	\$ (98,162)	\$ 73,910	\$ 12,830	\$ 4,006,805
Cumulative effect of accounting changes	—	—	—	—	14,508	—	—	—	14,508
Balance, January 1, 2017	100	6	3,828,677	(124,803)	328,755	(98,162)	73,910	12,830	4,021,313
Issuances of Class A common stock:									
Exercise of stock options	2	—	36,503	—	—	—	—	—	36,505
Employee benefits	—	—	11,200	—	—	—	—	—	11,200
Employee Stock Purchase Plan	—	—	8,758	—	—	—	—	—	8,758
Stock-based compensation	—	—	10,103	—	—	—	—	—	10,103
Reacquisition and retirement of Tracking Stock pursuant to the Share Exchange	—	(6)	(227,278)	—	—	—	(73,255)	—	(300,539)
Other comprehensive income (loss)	—	—	—	(5,443)	—	—	—	409	(5,034)
Net income (loss)	—	—	—	—	392,561	—	(655)	1,583	393,489
Other, net	—	—	1,498	92	—	—	—	—	1,590
Balance, December 31, 2017	102	—	3,669,461	(130,154)	721,316	(98,162)	—	14,822	4,177,385
Cumulative effect of accounting changes	—	—	—	10,467	12,656	—	—	—	23,123
Balance, January 1, 2018	102	—	3,669,461	(119,687)	733,972	(98,162)	—	14,822	4,200,508
Issuances of Class A common stock:									
Exercise of stock options	—	—	4,404	—	—	—	—	—	4,404
Employee benefits	—	—	7,605	—	—	—	—	—	7,605
Employee Stock Purchase Plan	—	—	9,368	—	—	—	—	—	9,368
Stock-based compensation	—	—	9,990	—	—	—	—	—	9,990
Other comprehensive income (loss)	—	—	—	(3,462)	—	—	—	(1,389)	(4,851)
Net income (loss)	—	—	—	—	(40,475)	—	—	1,842	(38,633)
Treasury share repurchase	—	—	—	—	—	(33,292)	—	—	(33,292)
Other, net	—	—	1,694	(1,951)	632	—	—	—	375
Balance, December 31, 2018	102	—	3,702,522	(125,100)	694,129	(131,454)	—	15,275	4,155,474
Issuances of Class A common stock:									
Exercise of stock options	3	—	67,307	—	—	—	—	—	67,310
Employee benefits	—	—	6,654	—	—	—	—	—	6,654
Employee Stock Purchase Plan	—	—	9,778	—	—	—	—	—	9,778
Stock-based compensation	—	—	9,353	—	—	—	—	—	9,353
Purchase of non-controlling interest	—	—	(833)	—	—	—	—	(6,480)	(7,313)
Net assets distributed pursuant to the BSS Transaction	—	—	(532,747)	—	—	—	—	—	(532,747)
Issuance of equity and contribution of assets pursuant to the Yahsat JV formation	—	—	29,576	—	—	—	—	73,199	102,775
Other comprehensive income (loss)	—	—	—	2,962	—	—	—	3,328	6,290
Net income (loss)	—	—	—	—	(62,917)	—	—	(11,335)	(74,252)
Other, net	—	—	(1,127)	—	1,597	—	—	1,761	2,231
Balance, December 31, 2019	\$ 105	\$ —	\$ 3,290,483	\$ (122,138)	\$ 632,809	\$ (131,454)	\$ —	\$ 75,748	\$ 3,745,553

The accompanying notes are an integral part of these Consolidated Financial Statements.

EHOSTAR CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Amounts in thousands)

	For the years ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income (loss)	\$ (74,252)	\$ (38,633)	\$ 393,489
Adjustments to reconcile net income (loss) to net cash flows from operating activities:			
Depreciation and amortization	588,200	598,178	533,849
Impairment of long-lived assets	—	65,220	10,762
Losses (gains) on investments, net	(28,912)	12,109	(53,453)
Equity in losses (earnings) of unconsolidated affiliates, net	14,734	6,037	(15,814)
Foreign currency transaction losses (gains), net	11,590	15,583	(1,218)
Deferred tax provision (benefit), net	32,542	26,327	(288,577)
Stock-based compensation	9,353	9,990	10,103
Amortization of debt issuance costs	5,912	7,923	7,378
Dividends received from unconsolidated affiliates	2,716	10,000	19,000
Proceeds from sale of trading securities	—	—	8,922
Changes in current assets and current liabilities, net:			
Trade accounts receivable and contract assets, net	8,289	(17,842)	421
Other current assets	(39,190)	18,577	200,584
Trade accounts payable	13,149	9,562	(78,419)
Contract liabilities	26,376	7,867	5,322
Accrued expenses and other current liabilities	66,352	12,183	7,402
Changes in non-current assets and non-current liabilities, net	13,166	(5,070)	(36,975)
Other, net	6,297	(3,489)	4,116
Net cash flows from operating activities	656,322	734,522	726,892
Cash flows from investing activities:			
Purchases of marketable investment securities	(993,369)	(2,973,254)	(855,717)
Sales and maturities of marketable investment securities	2,391,220	1,498,463	580,235
Investments in unconsolidated affiliates	(2,149)	(115,991)	—
Sale of investment in unconsolidated affiliates	—	1,558	17,781
Dividend received from unconsolidated affiliate	2,284	—	—
Purchase of other investments	(93,687)	—	—
Expenditures for property and equipment	(418,584)	(555,141)	(583,211)
Refunds and other receipts related to property and equipment	—	77,524	4,311
Expenditures for externally marketed software	(29,310)	(31,639)	(31,331)
Purchases of regulatory authorizations	(34,447)	—	—
Net cash flows from investing activities	821,958	(2,098,480)	(867,932)

Cash flows from financing activities:			
Repurchase and maturity of the 2019 Senior Secured Notes	(920,923)	(70,173)	—
Repayment of other long-term debt and finance lease obligations	(29,347)	(41,019)	(37,670)
Payment of in-orbit incentive obligations	(5,447)	(5,350)	(5,487)
Net proceeds from Class A common stock options exercised	67,337	4,424	35,536
Net proceeds from Class A common stock issued under the Employee Stock Purchase Plan	9,779	9,368	8,758
Treasury share purchase	—	(33,292)	—
Purchase of non-controlling interest	(7,313)	—	—
Other, net	603	(521)	(1,065)
Net cash flows from financing activities	(885,311)	(136,563)	72
Effect of exchange rates on cash and cash equivalents	(575)	(2,233)	1,351
Net increase (decrease) in cash and cash equivalents	592,394	(1,502,754)	(139,617)
Cash and cash equivalents, including restricted amounts, beginning of period	929,495	2,432,249	2,571,866
Cash and cash equivalents, including restricted amounts, end of period	<u>\$ 1,521,889</u>	<u>\$ 929,495</u>	<u>\$ 2,432,249</u>
Supplemental disclosure of cash flow information:			
Cash paid for interest (including capitalized interest)	<u>\$ 195,331</u>	<u>\$ 240,596</u>	<u>\$ 207,617</u>
Cash paid for income taxes	<u>\$ 3,575</u>	<u>\$ 5,209</u>	<u>\$ 11,033</u>

The accompanying notes are an integral part of these Consolidated Financial Statements.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1. ORGANIZATION AND BUSINESS ACTIVITIES**Principal Business**

EchoStar Corporation (which, together with its subsidiaries, is referred to as "EchoStar," the "Company," "we," "us" and "our") is a holding company that was organized in October 2007 as a corporation under the laws of the State of Nevada and has operated as a separately traded public company from DISH Network Corporation ("DISH") since 2008. Our Class A common stock is publicly traded on the NASDAQ Global Select Market ("NASDAQ") under the symbol "SATS."

We are a global provider of broadband satellite technologies, broadband internet services for consumer customers, which include home and small to medium-sized businesses, and satellite services. We also deliver innovative network technologies, managed services and communications solutions for enterprise customers, which include aeronautical and government enterprises. We operate in the following two business segments:

- **Hughes** — which provides broadband satellite technologies and broadband internet services to domestic and international consumer customers and broadband network technologies, managed services, equipment, hardware, satellite services and communication solutions to service providers and enterprise customers. The Hughes segment also designs, provides and installs gateway and terminal equipment to customers for other satellite systems. In addition, our Hughes segment designs, develops, constructs and provides telecommunication networks comprising satellite ground segment systems and terminals to mobile system operators and our enterprise customers.
- **ESS** — which uses certain of our owned and leased in-orbit satellites and related licenses to provide satellite services on a full-time and/or occasional-use basis to United States ("U.S.") government service providers, internet service providers, broadcast news organizations, content providers and private enterprise customers.

Our operations also include various corporate departments (primarily Executive, Treasury, Strategic Development, Human Resources, IT, Finance, Accounting, Real Estate and Legal) and other activities that have not been assigned to our operating segments such as costs incurred in certain satellite development programs and other business development activities, and gains or losses from certain of our investments. These activities, costs and income, as well as eliminations of intersegment transactions, are accounted for in *Corporate and Other*. We also divide our operations by primary geographic market as follows: (i) North America (the U.S. and its territories, Mexico, and Canada); (ii) South and Central America and; (iii) All other (Asia, Africa, Australia, Europe, India, and the Middle East). Refer to *Note 21. Segment Reporting* for further detail.

In May 2019, we and one of our former subsidiaries, EchoStar BSS Corporation ("BSS Corp."), entered into a master transaction agreement (the "Master Transaction Agreement") with DISH and a wholly-owned subsidiary of DISH ("Merger Sub"). Pursuant to the terms of the Master Transaction Agreement, on September 10, 2019: (i) we transferred to BSS Corp. certain real property and the various businesses, products, licenses, technology, revenues, billings, operating activities, assets and liabilities primarily relating to the former portion of our ESS segment that managed, marketed and provided (1) broadcast satellite services primarily to DISH and its subsidiaries (together with DISH, "DISH Network") and our joint venture Dish Mexico, S. de R.L. de C.V., ("Dish Mexico") and its subsidiaries and (2) telemetry, tracking and control ("TT&C") services for satellites owned by DISH Network and a portion of our other businesses (collectively, the "BSS Business"); (ii) we distributed to each holder of shares of our Class A or Class B common stock entitled to receive consideration in the transaction an amount of shares of common stock of BSS Corp., par value \$0.001 per share ("BSS Common Stock"), equal to one share of BSS Common Stock for each share of our Class A or Class B common stock owned by such stockholder (the "Distribution"); and (iii) immediately after the Distribution, (1) Merger Sub merged with and into BSS Corp. (the "Merger"), such that BSS Corp. became a wholly-owned subsidiary of DISH and DISH owns and operates the BSS Business, and (2) each issued and outstanding share of BSS Common Stock owned by EchoStar stockholders was converted into the right to receive 0.23523769 shares of DISH Class A common stock, par value \$0.001 per share ("DISH Common Stock") (i) - (iii) collectively, the "BSS Transaction").

In connection with the BSS Transaction, we and DISH Network agreed to indemnify each other against certain losses with respect to breaches of certain representations and covenants and certain retained and assumed liabilities, respectively. Additionally, we and DISH and certain of our and their subsidiaries (i) entered into certain customary

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

agreements covering, among other things, matters relating to taxes, employees, intellectual property and the provision of transitional services; (ii) terminated certain previously existing agreements; and (iii) amended certain existing agreements and entered into certain new agreements pursuant to which we and DISH Network will obtain and provide certain products, services and rights from and to each other.

The BSS Transaction was structured in a manner intended to be tax-free to us and our stockholders for U.S. federal income tax purposes and was accounted for as a spin-off to our shareholders as we did not receive any consideration. Following the consummation of the BSS Transaction, we no longer operate the BSS Business, which was a substantial portion of our ESS segment. As a result of the BSS Transaction, the financial results of the BSS Business, except for certain real estate that transferred in the transaction, are presented as discontinued operations and, as such, excluded from continuing operations and segment results for all periods presented in these Consolidated Financial Statements.

During 2017, we and certain of our subsidiaries entered into a share exchange agreement (the "Share Exchange Agreement") with DISH and certain of its subsidiaries. We, and certain of our subsidiaries, received all the shares of the Hughes Retail Preferred Tracking Stock previously issued by us and one of our subsidiaries (together, the "Tracking Stock") in exchange for 100% of the equity interests of certain of our subsidiaries that held substantially all of our former EchoStar Technologies businesses and certain other assets (collectively, the "Share Exchange"). Following the consummation of the Share Exchange, we no longer operate our former EchoStar Technologies businesses, the Tracking Stock was retired and is no longer outstanding, and all agreements, arrangements and policy statements with respect to the Tracking Stock terminated. As a result of the Share Exchange, the financial results of the EchoStar Technologies businesses are presented as discontinued operations in these Consolidated Financial Statements.

Refer to *Note 5. Discontinued Operations* for further detail. Additionally, all amounts in the following footnotes reference results from continuing operations unless otherwise noted.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation and Basis of Presentation

These Consolidated Financial Statements and the accompanying notes are prepared in conformity with generally accepted accounting principles in the United States ("U.S. GAAP"). We consolidate all entities in which we have a controlling financial interest. We are deemed to have a controlling financial interest in variable interest entities in which we are the primary beneficiary and in other entities in which we own more than 50% of the outstanding voting shares and other shareholders do not have substantive rights to participate in management. For entities we control but do not wholly own, we record a non-controlling interest within stockholders' equity for the portion of the entity's equity attributed to the non-controlling ownership interests. All significant intercompany balances and transactions have been eliminated in consolidation.

All amounts presented in these Consolidated Financial Statements and their accompanying notes are expressed in thousands of U.S. dollars, except share and per share amounts and unless otherwise noted.

Reclassification

Certain prior period amounts have been reclassified to conform with the current period presentation.

Use of Estimates

We are required to make certain estimates and assumptions that affect the amounts reported in these Consolidated Financial Statements. The most significant estimates and assumptions are used in determining: (i) inputs used to recognize revenue over time, including amortization periods for deferred contract acquisition costs; (ii) allowances for doubtful accounts; (iii) deferred taxes and related valuation allowances, including uncertain tax positions; (iv) loss contingencies; (v) fair value of financial instruments; (vi) fair value of assets and liabilities acquired in business combinations; and (vii) asset impairment testing.

We base our estimates and assumptions on historical experience, observable market inputs and on various other factors that we believe to be relevant under the circumstances. Due to the inherent uncertainty involved in making

EHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

estimates, actual results may differ from previously estimated amounts and such differences may be material to our financial statements. Additionally, changing economic conditions may increase the inherent uncertainty in the estimates and assumptions indicated above. We review our estimates and assumptions periodically and the effects of revisions thereto are reflected in the period they occur or prospectively if the revised estimate affects future periods.

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 utilize the highest level of inputs available according to 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, quoted prices for identical or similar instruments in markets that are not active and model-derived valuations in which significant inputs and significant value drivers are observable in active markets; and
- Level 3 - Defined as unobservable inputs for which little or no market data exists, consistent with characteristics of the asset or liability that would be considered by market participants in a transaction to purchase or sell the asset or liability.

Fair values of our marketable investment securities are measured on a recurring basis based on a variety of observable market inputs. For our investments in publicly traded equity securities and U.S. government securities, fair value ordinarily is determined based on Level 1 measurements that reflect quoted prices for identical securities in active markets. Fair values of our investments in other marketable debt securities are generally based on Level 2 measurements as the markets for such debt securities are less active. We consider trades of identical debt securities on or near the measurement date as a strong indication of fair value and matrix pricing techniques that consider par value, coupon rate, credit quality, maturity and other relevant features may also be used to determine fair value of our investments in marketable debt securities. Fair values for our outstanding debt are based on quoted market prices in less active markets and are categorized as Level 2 measurements. Additionally, we use fair value measurements from time to time in connection with other investments, asset impairment testing and the assignment of purchase consideration to assets and liabilities of acquired companies. Those fair value measurements typically include significant unobservable inputs and are categorized within Level 3 of the fair value hierarchy.

Transfers between levels in the fair value hierarchy are considered to occur at the beginning of the quarterly accounting period. There were no transfers between levels during the years ended December 31, 2019 and 2018.

As of December 31, 2019 and 2018, the carrying amounts of our cash and cash equivalents, trade accounts receivable and contract assets, net, trade accounts payable, and accrued expenses and other current liabilities were equal to or approximated their fair value due to their short-term nature or proximity to current market rates.

Revenue Recognition

Overview

Revenue is recognized upon transfer of control of the promised goods or our performance of the services to our customers in an amount that reflects the consideration we expect to receive in exchange for those goods or services. We enter into contracts that may include various combinations of products and services, which are generally distinct and accounted for as separate performance obligations.

We also recognize lease revenue which is derived from leases of property and equipment which, for operating leases, is reported in *Services and other revenue* in the Consolidated Statements of Operations and, for sales-type leases, is reported in *Equipment revenue* in the Consolidated Statements of Operations. Certain of our customer contracts

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

contain embedded equipment leases, which we separate from non-lease components of the contract based on the relative standalone selling prices of the lease and non-lease components.

Hughes Segment

Our Hughes segment service contracts typically obligate us to provide substantially the same services on a recurring basis in exchange for fixed recurring fees over the term of the contract. We satisfy such performance obligations over time and recognize revenue ratably as services are rendered over the service period. Certain of our contracts with service obligations provide for fees based on usage, capacity or volume. We satisfy these performance obligations and recognize the related revenue at the point in time, or over the period, when the services are rendered. Our Hughes segment also sells and leases communications equipment to its customers. Revenue from equipment sales generally is recognized based upon shipment terms. Our equipment sales contracts typically include standard product warranties, but generally do not provide for returns or refunds. Revenue for extended warranties is recognized ratably over the extended warranty period. For contracts with multiple performance obligations, we typically allocate the contract's transaction price to each performance obligation based on their relative standalone selling prices. When the standalone selling price is not observable, our primary method used to estimate standalone selling price is the expected cost plus a margin. Our contracts generally require customer payments to be made at or shortly after the time we transfer control of goods or perform the services.

In addition to equipment and service offerings, our Hughes segment also enters into long-term contracts to design, develop, construct and install complex telecommunication networks for mobile system operators and enterprise customers. Revenue from such contracts is generally recognized over time as a measure of progress that depicts the transfer of control of the goods or services to the customer. Depending on the nature of the arrangement, we measure progress toward contract completion using an appropriate input method or output method. Under the input method, we recognize the transaction price as revenue based on the ratio of costs incurred to estimated total costs at completion. Under the output method, revenue and cost of sales are recognized as products are delivered based on the expected profit for the entire agreement. Profit margins on long-term contracts generally are based on estimates of revenue and costs at completion. We review and revise our estimates periodically and recognize related adjustments in the period in which the revisions are made. Estimated losses on contracts are recorded in the period in which they are identified. We generally receive interim payments as work progresses, although for some contracts, we may be entitled to receive an advance payment.

ESS Segment

Generally, our ESS segment service contracts with customers contain a single performance obligation and, therefore, there is no need to allocate the transaction price. We transfer control and recognize revenue for satellite services at the point in time or over the period when the services are rendered.

Lease Revenue

We lease satellite capacity, communications equipment and real estate to certain of our customers. We identify and determine the classification of such leases as operating leases or sales-type leases. A lease is classified as a sales-type lease if it meets the criteria for a finance lease; otherwise it is classified as an operating lease. Some of our leases are embedded in contracts with customers that include non-lease performance obligations. For such contracts, except where we have elected otherwise, we allocate consideration in the contract between lease and non-lease components based on their relative standalone selling prices. We elected an accounting policy to not separate the lease of equipment from related services in our HughesNet satellite internet service (the "HughesNet service") contracts with customers and account for all revenue from such contracts as non-lease service revenue. Assets subject to operating leases remain in *Property and equipment, net* and continue to be depreciated. Assets subject to sales-type leases are derecognized from *Property and equipment, net* at lease commencement and a net investment in the lease asset is recognized in *Trade accounts receivable and contract assets, net* and *Other non-current assets, net*.

Operating lease revenue is generally recognized on a straight-line basis over the lease term. Sales-type lease revenue and a corresponding receivable generally are recognized at lease commencement based on the present value of the future lease payments and related interest income on the receivable is recognized over the lease term. Payments under sales-type leases are discounted using the interest rate implicit in the lease or our incremental borrowing rate.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

if the interest rate implicit in the lease cannot be reasonably determined. We report revenue from sales-type leases at the commencement date in *Equipment revenue* and periodic interest income in *Services and other revenue*. We report operating lease revenue in *Services and other revenue*.

Other

Sales and Value Added Taxes, Universal Service Fees and other taxes that we collect concurrent with revenue producing activities are excluded from revenue, and included in *Accrued expenses and other current liabilities* in the Consolidated Balance Sheets.

Shipping and handling costs associated with outbound freight are accounted for as a fulfillment cost after control over a product has transferred to the customer and are included in *Cost of sales - equipment* in the Consolidated Statements of Operations at the time of shipment.

Cost of Sales - Services and Other

Cost of sales - services and other in the Consolidated Statements of Operations primarily consists of costs of satellite capacity and services, hub infrastructure, customer care, wireline and wireless capacity and direct labor costs associated with the services provided and is generally charged to expense as incurred.

Cost of Sales - Equipment

Cost of sales - equipment in the Consolidated Statements of Operations primarily consists of inventory costs, including freight and royalties, and is generally recognized at the point in time control of the equipment is passed to the customer and related revenue is recognized.

Additionally, customer-related research and development costs are incurred in connection with the specific requirements of a customer's order; in such instances, the amounts for these customer funded development efforts are also included in *Cost of sales - equipment* in the Consolidated Statements of Operations.

Stock-based Compensation Expense

Stock-based compensation expense is recognized based on the fair value of stock awards ultimately expected to vest. Forfeitures are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. Compensation expense for awards with service conditions only is recognized on a straight-line basis over the requisite service period for the entire award. Compensation expense for awards subject to performance conditions is recognized only when satisfaction of the performance condition is probable.

Advertising Costs

Advertising costs are expensed as incurred and are included in *Selling, general and administrative expenses* in the Consolidated Statements of Operations.

Research and Development

Research and development costs, not incurred in connection with customer requirements, are generally expensed when incurred.

Debt Issuance Costs

Costs of issuing debt generally are deferred and amortized utilizing the effective interest method, with amortization included in *Interest expense, net of amounts capitalized* in the Consolidated Statements of Operations. We report unamortized debt issuance costs as a reduction of the related long-term debt in the Consolidated Balance Sheets.

Foreign Currency

The functional currency for certain of our foreign operations is determined to be the local currency. Accordingly, we translate assets and liabilities of these foreign entities from their local currencies to U.S. dollars using period-end exchange rates and translate income and expense accounts at monthly average rates. The resulting translation adjustments are reported as *Foreign currency translation adjustments* in the Consolidated Statements of Comprehensive Income (Loss). Except in certain uncommon circumstances, we have not recorded deferred income taxes related to our foreign currency translation adjustments.

Gains and losses resulting from the re-measurement of transactions denominated in foreign currencies are recognized in *Foreign currency transaction gains (losses), net* in the Consolidated Statements of Operations.

Income Taxes

We recognize a provision or benefit for income taxes currently payable or receivable and for income tax amounts deferred to future periods. Deferred tax assets and liabilities reflect the effects of tax losses, credits, and the future income tax effects of temporary differences between U.S. GAAP carrying amounts of existing assets and liabilities and their respective tax bases and are measured using enacted tax rates that apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Deferred tax assets are offset by valuation allowances when we determine it is more likely than not that such deferred tax assets will not be realized in the foreseeable future. We determine deferred tax assets and liabilities separately for each taxing jurisdiction and report the net amount for each jurisdiction as a non-current asset or liability in the Consolidated Balance Sheets.

From time to time, we engage in transactions where the income tax consequences are uncertain. We recognize tax benefits when, in management's judgment, a tax filing position is more likely than not to be sustained if challenged by the tax authorities. For tax positions that meet the more-likely-than-not threshold, we may not recognize a portion of a tax benefit depending on management's assessment of how the tax position will ultimately be settled. Unrecognized tax benefits generally are netted against the deferred tax assets associated with our net operating loss carryforwards. We adjust our estimates periodically based on ongoing examinations by, and settlements with, various taxing authorities, as well as changes in tax laws, regulations and precedent. Estimates of our uncertain tax positions are made based upon prior experience and are updated in light of changes in facts and circumstances. However, due to the uncertain and complex application of tax regulations, it is possible that the ultimate resolution of audits may result in liabilities which could be materially different from these estimates. In such an event, we will record additional income tax provision or benefit in the period in which such resolution occurs. We classify interest and penalties, if any, associated with our unrecognized tax benefits as a component of income tax provision or benefit.

Lessee Accounting

We lease real estate, satellite capacity and equipment in the conduct of our business operations. For contracts entered into on or after January 1, 2019, at contract inception, we assess whether the contract is, or contains, a lease. Generally, we determine that a lease exists when (i) the contract involves the use of a distinct identified asset, (ii) we obtain the right to substantially all economic benefits from use of the asset and (iii) we have the right to direct the use of the asset. A lease is classified as a finance lease when one or more of the following criteria are met: (i) the lease transfers ownership of the asset by the end of the lease term, (ii) the lease contains an option to purchase the asset that is reasonably certain to be exercised, (iii) the lease term is for a major part of the remaining useful life of the asset, (iv) the present value of the lease payments equals or exceeds substantially all of the fair value of the asset or (v) the asset is of a specialized nature and there is not expected to be an alternative use to the lessor at the end of the lease term. A lease is classified as an operating lease if it does not meet any of these criteria. Our operating leases consist primarily of leases for office space, data centers and satellite ground facilities. Our finance leases consist primarily of leases for satellite capacity.

At the lease commencement date, we recognize a right-of-use asset and a lease liability for all leases, except short-term leases with an original term of 12 months or less. The right-of-use asset represents the right to use the leased asset for the lease term including any renewal options we are reasonably certain to exercise. The lease liability represents the present value of the lease payments under the lease. The right-of-use asset is initially measured at cost, which primarily comprises the initial amount of the lease liability, plus any prepayments to the lessor and initial

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

direct costs such as brokerage commissions, less any lease incentives received. All right-of-use assets are periodically reviewed for impairment in accordance with standards that apply to long-lived assets. The lease liability is initially measured at the present value of the minimum lease payments, discounted using an estimate of our incremental borrowing rate for a collateralized loan with the same term as the underlying lease. The incremental borrowing rates used for the initial measurement of lease liabilities are based on the original lease terms.

We report operating lease right-of-use assets in *Operating lease right-of-use assets* and operating lease liabilities in *Accrued expenses and other current liabilities* and *Operating lease liabilities*. We report finance lease right-of-use assets in *Property and equipment, net* and finance lease liabilities in *Current portion of long-term debt and finance lease obligations* and *Long-term debt and finance lease obligations, net of current portion*.

Minimum lease payments included in the measurement of lease liabilities consist of (i) fixed lease payments for the non-cancelable lease term, (ii) fixed lease payments for optional renewal periods where it is reasonably certain the renewal option will be exercised and (iii) variable lease payments that depend on an underlying index or rate, based on the index or rate in effect at lease commencement. Certain of our real estate lease agreements require payments for non-lease costs such as utilities and common area maintenance. We elected an accounting policy to not account for such payments separately from the related lease payments. Our policy election results in a higher initial measurement of lease liabilities when such non-lease payments are fixed amounts. Certain of our real estate lease agreements require variable lease payments that do not depend on an underlying index or rate, such as sales and value-added taxes and our proportionate share of actual property taxes, insurance and utilities, which are recognized in operating expenses as incurred.

Lease expense for operating leases consists of the fixed lease payments recognized on a straight-line basis over the lease term plus variable lease payments as incurred. Lease expense for finance leases consists of the amortization of the right-of-use asset on a straight-line basis over the lease term and interest expense on the lease liability based on the discount rate at lease commencement. For both operating and finance leases, lease payments are allocated between a reduction of the lease liability and interest expense. Amortization of the right-of-use asset for operating leases reflects amortization of the lease liability, any differences between straight-line expense and related lease payments during the accounting period, and any impairments.

Business Combinations

We account for all business combinations that result in our control over another entity by using the acquisition method of accounting, which requires us to allocate the purchase price of the acquired business to the identifiable tangible and intangible assets acquired and liabilities assumed, including contingent consideration, and non-controlling interests, based upon their estimated fair values at the date of acquisition. The difference between the purchase price and the excess of the aggregate estimated fair values of assets acquired and liabilities assumed is recorded as goodwill. In determining the estimated fair values of assets acquired and liabilities assumed in a business combination, we use various recognized valuation methods including present value modeling, referenced market values, where available and cost based approaches. Valuations are performed by management or independent valuation specialists under management's supervision, where appropriate.

Accounting for business combinations requires us to make significant estimates and assumptions, especially at the acquisition date, including our estimates for intangible assets, contractual obligations assumed and contingent consideration, where applicable. While we believe the assumptions and estimates we have made are reasonable and appropriate, they are based in part on historical experience and information obtained from management of the acquired business and are inherently uncertain and subject to refinement.

We believe that the estimated fair values assigned to the assets we have acquired and liabilities we have assumed are based on reasonable and appropriate assumptions. While we believe our estimates and assumptions are reasonable and appropriate, they are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we may record adjustments to the assets we have acquired and liabilities we have assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the estimated fair values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments would be recorded in the Consolidated Statements of Operations. In addition, results of operations of the acquired company are included in the our results from the date of the acquisition

EHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

forward and include amortization expense arising from acquired intangible assets. We expense all costs as incurred related to or involved with an acquisition in *Other, net*, in the Consolidated Statements of Operations.

Cash and Cash Equivalents

We consider all liquid investments purchased with an original maturity of less than 90 days to be cash equivalents. Cash equivalents as of December 31, 2019 and 2018 primarily consisted of commercial paper, government bonds, corporate notes and money market funds. The amortized cost of these investments approximates their fair value.

Marketable Investment Securities

Debt Securities

We account for our debt securities as available-for-sale or using the fair value option based on our investment strategy for the securities. For available-for-sale debt securities, we recognize periodic changes in the difference between fair value and amortized cost in *Unrealized gains (losses) on available-for-sale securities* in the Consolidated Statements of Comprehensive Income (Loss). Gains and losses realized upon sales of available-for-sale debt securities are reclassified from other comprehensive income (loss) and recognized on the trade date in *Gains (losses) on investments, net* in the Consolidated Statements of Operations. We use the first-in, first-out ("FIFO") method to determine the cost basis on sales of available-for-sale debt securities. Interest income from available-for-sale debt securities is reported in *Interest income* in the Consolidated Statements of Operations.

We periodically evaluate our available-for-sale debt securities portfolio to determine whether any declines in the fair value of these securities are other-than-temporary. Our evaluation considers, among other things, (i) the length of time and extent to which the fair value of such security has been lower than amortized cost, (ii) market and company-specific factors related to the security and (iii) our intent and ability to hold the investment to maturity or when it recovers its value. We generally consider a decline to be other-than-temporary when (i) we intend to sell the security, (ii) it is more likely than not that we will be required to sell the security before maturity or when it recovers its value or (iii) we do not expect to recover the amortized cost of the security at maturity. Declines in the fair value of available-for-sale debt securities that are determined to be other-than-temporary are reclassified from other comprehensive income (loss) and recognized in *Net income (loss)* in the Consolidated Statements of Operations, thus establishing a new cost basis for the investment.

From time to time we make strategic investments in marketable corporate debt securities. Generally, we elect to account for these debt securities using the fair value option because it results in consistency in accounting for unrealized gains and losses for all securities in our portfolio of strategic investments. When we elect the fair value option for investments in debt securities, we recognize periodic changes in fair value of these securities in *Gains (losses) on investments, net* in the Consolidated Statements of Operations. Interest income from these securities is reported in *Interest income* in the Consolidated Statements of Operations.

Equity Securities

We account for our equity securities with readily determinable fair values at fair value and recognize periodic changes in the fair value in *Gains (losses) on investments, net* in the Consolidated Statements of Operations. We recognize dividend income on equity securities on the ex-dividend date and report such income in *Other, net* in the Consolidated Statements of Operations.

Restricted Marketable Investment Securities

Restricted marketable investment securities that are pledged as collateral for our letters of credit and surety bonds are included in *Other non-current assets, net* in the Consolidated Balance Sheets. Restricted marketable securities are accounted for in the same manner as marketable securities that are not restricted, but are presented differently in the Consolidated Balance Sheets due to the restrictions.

Trade Accounts Receivable

Trade accounts receivable includes amounts billed and currently due from customers and represents our unconditional rights to consideration arising from our performance under our customer contracts. Trade accounts receivable also includes amounts due from customers under our leasing arrangements. We make ongoing estimates relating to the collectability of our trade accounts receivable and maintain an allowance for estimated losses resulting from the inability of our customers to make the required payments. In determining the amount of the allowance, we consider historical levels of credit losses and make judgments about the creditworthiness of our customers based on ongoing credit evaluations. Past due trade accounts receivable balances are written off when our internal collection efforts have been unsuccessful. Bad debt expense related to our trade accounts receivable and other contract assets is included in *Selling, general and administrative expenses* in the Consolidated Statements of Operations.

Contract Assets

Contract assets represent revenue that we have recognized in advance of billing the customer and are included in *Trade accounts receivable and contract assets, net* or *Other non-current assets, net* in the Consolidated Balance Sheets based on the expected timing of customer payment. Our contract assets typically relate to our long-term contracts where we recognize revenue using the cost-based input method and the revenue recognized exceeds the amount billed to the customer.

Contract Acquisition Costs

Our contract acquisition costs represent incremental direct costs of obtaining a contract and consist primarily of sales incentives paid to employees and third-party representatives. When we determine that our contract acquisition costs are recoverable, we defer and amortize the costs over the contract term, or over the estimated life of the customer relationship if anticipated renewals are expected and the incentives payable upon renewal are not commensurate with the initial incentive. We amortize contract acquisition costs in proportion to the revenue to which the costs relate. We expense sales incentives as incurred if the expected amortization period is one year or less. Unamortized contract acquisition costs are included in *Other non-current assets, net* in the Consolidated Balance Sheets and related amortization expense is included in *Selling, general and administrative expenses* in the Consolidated Statements of Operations.

Inventory

Inventory is stated at the lower of cost or net realizable value. Cost of inventory is determined using the FIFO method and consists primarily of materials, direct labor and indirect overhead incurred in the procurement and manufacturing of our products. We use standard costing methodologies in determining the cost of certain of our finished goods and work-in-process inventories. We determine net realizable value using our best estimates of future use or recovery, considering the aging and composition of inventory balances, the effects of technological and/or design changes, forecasted future product demand based on firm or near-firm customer orders and alternative means of disposition of excess or obsolete items. We recognize losses within *Cost of sales - equipment* in the Consolidated Statements of Operations when we determine that the cost of inventory and commitments to purchase inventory exceed net realizable value.

Property and Equipment

Satellites

Satellites are stated at cost, less accumulated depreciation. Depreciation is recorded on a straight-line basis over their estimated useful lives. The cost of our satellites includes construction costs, including the present value of in-orbit incentives payable to the satellite manufacturer, launch costs, capitalized interest and related insurance premiums. We depreciate our owned satellites on a straight-line basis over the estimated useful life of each satellite.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

We have satellites acquired under finance leases. The recorded costs of those satellites are the present values of all lease payments. We amortize our finance lease right-of-use satellites over their respective lease terms.

Our satellites may experience anomalies from time to time, some of which may have a significant adverse effect on their remaining useful lives, the commercial operation of the satellites or our operating results or financial position.

We evaluate our satellites for impairment and test for recoverability whenever events or changes in circumstances indicate that their carrying value may not be recoverable. Certain anomalies may be considered a significant adverse change in the physical condition of a particular satellite. However, based on redundancies designed within each satellite, certain of these anomalies may not be considered to be significant events requiring a test of recoverability.

We generally do not carry in-orbit insurance on our satellites and payloads because we have assessed that the cost of insurance is not economical relative to the risk of failures. Therefore, we generally bear the risk of any in-orbit failures. However, we may be required to carry insurance on specific satellites and payloads per the terms of certain agreements. We will continue to assess circumstances going forward and make insurance-related decisions on a case-by-case basis.

Other Property and Equipment

Other property and equipment are stated at cost, less accumulated depreciation. Depreciation is recorded on a straight-line basis over their estimated useful lives. Other property and equipment includes: land; buildings and improvements; furniture, fixtures, equipment and internal-use software; customer premises equipment; and construction in process. 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, not in excess of five years. Repair and maintenance costs are charged to expense when incurred.

Goodwill

Goodwill represents the excess of the cost of acquired businesses over the estimated fair values assigned to the identifiable assets acquired and liabilities assumed. We test goodwill for impairment annually in our second fiscal quarter, or more frequently if indicators of impairment may exist. All of our goodwill is assigned to our Hughes segment, as it was generated through the acquisition of Hughes Communications, Inc. ("Hughes Communications") and its subsidiaries in 2011 (the "Hughes Acquisition"), and the agreement with Al Yah Satellite Communications Company PrJSC ("Yahsat") pursuant to which, in November 2019, Yahsat contributed its satellite communications services business in Brazil to one of our Brazilian subsidiaries in exchange for a 20% equity ownership interest in that subsidiary (the "Yahsat Brazil JV Transaction").

We consider qualitative factors to assess if it is more likely than not that the fair value for goodwill is below the carrying amount. We may also elect to bypass the qualitative assessment and perform a quantitative assessment. In conducting a qualitative assessment, we analyze a variety of events or factors that may influence the fair value of the reporting unit. There has been no impairment to date.

Regulatory Authorizations

Finite Lived

We have regulatory authorizations that are not related to the Federal Communications Commission ("FCC") and have determined that they have finite lives due to uncertainties about the ability to extend or renew their terms.

Finite lived regulatory authorizations are amortized over their estimated useful lives on a straight-line basis. Renewal costs are usually capitalized when they are incurred.

Indefinite Lived

We also have indefinite lived regulatory authorizations that primarily consist of FCC authorizations and certain other contractual or regulatory rights to use spectrum at specified orbital locations. We have determined that our FCC authorizations generally have indefinite useful lives based on the following:

- FCC authorizations are non-depleting assets;
- Renewal satellite applications generally are authorized by the FCC subject to certain conditions, without substantial cost under a stable regulatory, legislative and legal environment;
- Expenditures required to maintain the authorization are not significant; and
- We intend to use these authorizations indefinitely.

Costs incurred to maintain or renew indefinite-lived regulatory authorizations are expensed as incurred.

Other Intangible Assets

Our other intangible assets consist of customer relationships, patents, trademarks and licenses which are amortized using the straight-line method over their estimated useful lives. We evaluate the recoverability of intangible assets periodically by taking into account events or circumstances that indicate that the carrying amount of the assets may not be recoverable.

Impairment of Long-lived Assets

We review our long-lived assets for recoverability whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. The evaluation is performed at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. For assets held and used in operations, the asset is not recoverable if the carrying amount of the asset exceeds its undiscounted estimated future net cash flows. When an asset is not recoverable, we adjust the carrying amount of such asset to its estimated fair value and recognize the impairment loss in *Impairment of long-lived assets* in the Consolidated Statements of Operations.

Other Investments

Equity Method Investments

We use the equity method to account for investments when we have the ability to exercise significant influence on the operating decisions of the affiliate. Such investments are initially recorded at cost and subsequently adjusted for our proportionate share of the net earnings or loss of the investee, which is reported in *Equity in earnings (losses) of unconsolidated affiliates, net* in the Consolidated Statements of Operations. During the fourth quarter of 2019, we changed our accounting policy to record our share of the net earnings or losses of these affiliates on a three-month lag. This change was immaterial to these Consolidated Financial Statements. Additionally, the carrying amount of such investments includes a component of goodwill when the cost of our investment exceeds the fair value of the underlying identifiable assets and liabilities of the affiliate. Lastly, dividends received from these affiliates reduces the carrying amount of our investment.

Other Equity Investments

We generally measure investments in non-publicly traded equity instruments without a readily determinable fair value at cost adjusted for observable price changes in orderly transactions for the identical or similar securities of the same issuer and changes resulting from impairments, if any. Other equity instruments are measured to determine their value based on observable market information.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Other Debt Investments

We generally record our investments in non-publicly traded debt instruments without a readily determinable fair value at amortized cost. We recognize any discounts over the term of the loan in *Interest income* in the Consolidated Statements of Operations. In addition, some of our debt instruments have interest income that is paid-in-kind, which is added to the principal balance to determine the then current interest income.

Impairment Considerations

We periodically evaluate all of our other investments to determine whether (i) events or changes in circumstances have occurred that may have a significant adverse effect on the fair value of the investment and (ii) if there has been observable price changes in orderly transactions for identical or similar securities of the same issuer. We consider information if provided to us by our investees such as current financial statements, business plans, investment documentation, capitalization tables, liquidation waterfalls, and board materials; and we may make additional inquiries of investee management.

Indicators of impairment may include, but are not limited to, unprofitable operations, material loss contingencies, changes in business strategy, changes in the investees' enterprise value and changes in the investees' investment pricing. When we determine that one of our other investments is impaired we reduce its carrying value to its estimated fair value and recognize the impairment loss in *Gains (losses) on investments, net* in the Consolidated Statements of Operations. Additionally, when there has been an observable price change to a cost method investment, we adjust the carrying amount of the investment to its then estimated fair value and recognize the investment gain or loss in *Gains (losses) on investments, net* in the Consolidated Statements of Operations.

Externally Marketed Software

Costs related to the procurement and development of externally marketed software are capitalized and amortized using the straight-line method over the estimated useful life of the software, not in excess of five years. Capitalized costs of externally marketed software are included in *Other non-current assets, net* in the Consolidated Balance Sheets. Externally marketed software generally is installed in the equipment we sell or lease to customers. We conduct software program reviews for externally marketed capitalized software costs at least annually, or as events and circumstances warrant such a review, to determine if capitalized software development costs are recoverable and to ensure that costs associated with programs that are no longer generating revenue are expensed.

Contract Liabilities

Contract liabilities consist of advance payments and billings in excess of revenue recognized under customer contracts and are included in *Contract liabilities* or *Other non-current liabilities* in the Consolidated Balance Sheets based on the timing of when we expect to recognize revenue. We recognize contract liabilities as revenue after all revenue recognition criteria have been met.

Recently Adopted Accounting Pronouncements

Leases

We adopted ASU No. 2016-02 - *Leases (Topic 842)*, as amended, codified as Accounting Standard Codification ("ASC 842"), as of January 1, 2019. The primary impact of ASC 842 on these Consolidated Financial Statements is the recognition of right-of-use assets and related liabilities in the Consolidated Balance Sheet for leases where we are the lessee. We elected to apply the requirements of the new standard prospectively on January 1, 2019 and did not restate these Consolidated Financial Statements for prior periods. Consequently, certain amounts reported in the Consolidated Balance Sheet as of December 31, 2019 are not comparable to those reported as of December 31, 2018 or earlier dates. Our adoption of ASC 842 did not have a material impact on our results of operations or cash flows for the year ended December 31, 2019.

Except for the new requirement to recognize assets and liabilities on the balance sheet for operating leases where we are the lessee, under our ASC 842 transition method, we continue to apply prior accounting standards to leases that

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

commenced prior to 2019. We fully apply ASC 842 requirements only to leases that commenced or were modified on or after January 1, 2019. We elected certain practical expedients under our transition method, including elections to not reassess (i) whether a contract is or contains a lease and (ii) the classification of existing leases. We also elected not to apply hindsight in determining whether optional renewal periods should be included in the lease term, which in some instances may impact the initial measurement of the lease liability and the calculation of straight-line expense over the lease term for operating leases. As a result of our transition elections, there was no change in our recognition of revenue and expense for leases that commenced prior to 2019. In addition, the application of ASC 842 requirements to new and modified leases did not materially affect our recognition of revenue or expenses for the year ended December 31, 2019.

Our adoption of ASC 842 resulted in the following adjustments to the Consolidated Balance Sheet effective January 1, 2019:

	Balance December 31, 2018		Adoption of ASC 842 Increase (Decrease)		Balance January 1, 2019
Other current assets	\$ 165,809	\$	(28)	\$	165,781
Operating lease right-of-use assets	—		120,358		120,358
Other non-current assets, net	338,390		(7,272)		331,118
Total assets	8,661,294		113,058		8,774,352
Accrued expenses and other current liabilities	181,698		17,453		199,151
Operating lease liabilities	—		100,085		100,085
Other non-current liabilities	80,304		(3,871)		76,433
Total liabilities	4,505,820		113,667		4,619,487
Accumulated earnings (losses)	694,129		(609)		693,520
Total stockholders' equity	4,155,474		(609)		4,154,865
Total liabilities and stockholders' equity	8,661,294		113,058		8,774,352

Revenue Recognition and Financial Instruments

On January 1, 2018, we adopted ASU No. 2014-09, Revenue from Contracts with Customers and related amendments (collectively, the "New Revenue Standard"). The New Revenue Standard established a comprehensive new model for revenue recognition, which is codified in Topic 606 (see Revenue Recognition above), and provided guidance for certain costs associated with customer contracts. We adopted the New Revenue Standard using the modified retrospective method for contracts that were not completed as of January 1, 2018. Accordingly, comparative information for prior periods has not been restated and continues to be reported under the accounting standards in effect for those periods. Upon adoption of the New Revenue Standard, we recognized the cumulative effect of its initial application as a net increase to Accumulated earnings in the Consolidated Balance Sheets of \$23 million, net of related income taxes. The adoption of the New Revenue Standard also impacted the timing of recognition of certain fees charged to our customers in our consumer markets; however, the adoption has not had, and we do not expect it to have, a material impact on the overall timing or amount of revenue recognition.

The primary impacts of the New Revenue Standard on our operating results relate to how we account for sales incentive costs. Historically, we charged sales incentives to expense as incurred, except for incentives related to the consumer business in our Hughes segment, which were initially deferred and subsequently amortized over the related service agreement term. Under the New Revenue Standard, we continue to defer incentives for our consumer business; however, we now amortize those incentives over the estimated customer life, which includes expected contract renewal periods. In addition, we now defer certain sales incentives related to other businesses in our Hughes segment and amortize those incentives over the related service agreement term. As a result of these changes, we have recognized additional contract acquisition costs on the Consolidated Balance Sheets and the costs generally are recognized as expenses over a longer period of time in the Consolidated Statements of Operations. The adoption of the New Revenue

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Standard by an unconsolidated entity had a similar impact on our investment in the unconsolidated entity, which we account for using the equity method.

Additionally, on January 1, 2018, we prospectively adopted the applicable requirements of the New Investment Standard. The New Investment Standard substantially revises standards for the recognition, measurement and presentation of financial instruments, including requiring all equity investments, except for investments in consolidated subsidiaries and investments accounted for using the equity method, to be measured at fair value with changes in the fair value recognized through earnings. The New Investment Standard permits an entity to elect to measure an equity security without a readily determinable fair value at its cost, adjusted for changes resulting from impairments and observable price changes in orderly transactions for identical or similar securities of the same issuer. It also amends certain disclosure requirements associated with equity investments and the fair value of financial instruments. Upon adoption of the New Investment Standard on January 1, 2018, we recorded a \$10 million charge to Accumulated earnings to include net unrealized losses on our marketable equity securities then designated as available-for-sale, which previously were recorded in Accumulated other comprehensive loss in the Consolidated Balance Sheets. For our equity investments without a readily determinable fair value that were previously accounted for using the cost method, we have elected to measure such securities at cost, adjusted for impairments and observable price changes. We expect our future net income or loss to be more volatile as a result of these changes in accounting for our investments in equity securities that were previously accounted for as available-for-sale or using the cost method.

Our adoption of these standards impacted the referenced line items on the Statement of Operations and Statements of Comprehensive Income (Loss) as follows:

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

	For the year ended December 31, 2018			
	As Reported	Adjustments Due to the		Balances If We Had Not Adopted the New Standards
		New Revenue Standard	New Investment Standard	
Statement of Operations:				
Revenue:				
Services and other revenue	\$ 1,557,228	\$ 2,323	\$ —	\$ 1,559,551
Total revenue	1,762,638	2,323	—	1,764,961
Costs and expenses:				
Cost of sales - services and other (exclusive of depreciation and amortization)	563,907	2,738	—	566,645
Selling, general and administrative expenses	436,088	8,520	—	444,608
Total costs and expenses	1,726,501	11,258	—	1,737,759
Operating income (loss)	36,137	(8,935)	—	27,202
Other income (expense):				
Interest expense, net of amounts capitalized	(219,288)	539	—	(218,749)
Gains (losses) on investments, net	(12,622)	—	(30,531)	(43,153)
Equity in earnings (losses) of unconsolidated affiliates, net	(5,954)	1,278	—	(4,676)
Total other income (expense), net	(161,923)	1,817	(30,531)	(190,637)
Income (loss) from continuing operations before income taxes	(125,786)	(7,118)	(30,531)	(163,435)
Income tax benefit (provision), net	(6,576)	1,852	—	(4,724)
Net income (loss)	(38,633)	(5,266)	(30,531)	(74,430)
Net income (loss) attributable to EchoStar Corporation common stock	(40,475)	(5,266)	(30,531)	(76,272)
Earnings (losses) per share:				
Basic	(0.42)	(0.05)	(0.32)	(0.79)
Diluted	(0.42)	(0.05)	(0.32)	(0.79)

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

	For the year ended December 31, 2018			
	As Reported	Adjustments Due to the		Balances If We Had Not Adopted the New Standards
		New Revenue Standard	New Investment Standard	
Statement of Comprehensive Income (Loss):				
Net income (loss)	\$ (38,633)	\$ (5,266)	\$ (30,531)	\$ (74,430)
Other comprehensive income (loss), net of tax:				
Unrealized gains (losses) on available-for-sale securities	(962)	—	(6,485)	(7,447)
Other-than-temporary impairment loss on available-for-sale securities	—	—	37,016	37,016
Total other comprehensive income (loss), net of tax	(5,413)	—	30,531	25,118
Comprehensive income (loss)	(44,046)	(5,266)	—	(49,312)
Comprehensive income (loss) attributable to EchoStar Corporation	(44,499)	(5,266)	—	(49,765)

Recently Issued Accounting Pronouncements Not Yet Adopted

Credit Losses

In June 2016, the FASB issued ASU No. 2016-13, *Measurement of Credit Losses on Financial Instruments*, which introduces a new approach to estimate credit losses on certain types of financial instruments based on expected losses instead of incurred losses. It also modifies the impairment model for available-for-sale debt securities and provides a simplified accounting model for purchased financial assets with credit deterioration since their origination. ASU No. 2016-13 is effective for fiscal years beginning after December 15, 2019 and interim periods within those fiscal years. Early adoption is permitted. We are currently assessing the impact of adopting this new accounting standard on these Consolidated Financial Statements and related disclosures.

NOTE 3. REVENUE RECOGNITION

Information About Contract Balances

The following is a summary for our contract balances:

	As of	
	December 31, 2019	December 31, 2018
Trade accounts receivable and contract assets, net:		
Sales and services	\$ 152,632	\$ 154,415
Leasing	4,016	7,990
Total trade accounts receivable	156,648	162,405
Contract assets	63,758	55,295
Allowance for doubtful accounts	(23,777)	(16,604)
Total trade accounts receivable and contract assets, net	\$ 196,629	\$ 201,096
Contract liabilities:		
Current	\$ 101,060	\$ 72,284
Non-current	10,572	10,133
Total contract liabilities	\$ 111,632	\$ 82,417

For the years ended December 31, 2019 and December 31, 2018, we recognized revenue of \$65.4 million and \$52.0 million, respectively, that were previously included in the contract liability balances as of December 31, 2018 and December 31, 2017, respectively.

A summary of our allowance for doubtful accounts activity is as follows:

	Balance at Beginning of Year	Bad Debt Expense	Deductions	Balance at End of Year
For the years ended:				
December 31, 2019	16,604	30,027	(22,854)	23,777
December 31, 2018	12,027	24,984	(20,407)	16,604
December 31, 2017	12,955	9,551	(10,479)	12,027

Contract Acquisition Costs

Unamortized contract acquisition costs totaled \$113.6 million and \$104.0 million as of December 31, 2019 and 2018, respectively, and related amortization expense totaled \$96.1 million and \$83.0 million for the years ended December 31, 2019 and 2018, respectively.

Transaction Price Allocated to Remaining Performance Obligations

As of December 31, 2019, the remaining performance obligations for our customer contracts with original expected durations of more than one year was \$857.7 million. We expect to recognize 47.0% of our remaining performance obligations of these contracts as revenue in the next twelve months. This amount excludes agreements with consumer customers in our Hughes segment, our leasing arrangements and agreements with certain customers under which collectibility of all amounts due through the term of contracts is uncertain.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Disaggregation of Revenue

Geographic Information

The following is our revenue from customer contracts disaggregated by primary geographic market and by segment:

	<u>Hughes</u>	<u>ESS</u>	<u>Corporate and Other</u>	<u>Consolidated Total</u>
For the year ended December 31, 2019				
North America	\$ 1,527,823	\$ 16,257	\$ 16,526	\$ 1,560,606
South and Central America	125,458	—	448	125,906
All other	199,461	—	108	199,569
Total revenue	<u>\$ 1,852,742</u>	<u>\$ 16,257</u>	<u>\$ 17,082</u>	<u>\$ 1,886,081</u>
For the year ended December 31, 2018				
North America	\$ 1,444,628	\$ 27,231	\$ 18,495	\$ 1,490,354
South and Central America	101,632	—	384	102,016
All other	170,268	—	—	170,268
Total revenue	<u>\$ 1,716,528</u>	<u>\$ 27,231</u>	<u>\$ 18,879</u>	<u>\$ 1,762,638</u>
For the year ended December 31, 2017				
North America	\$ 1,204,750	\$ 30,417	\$ 16,829	\$ 1,251,996
South and Central America	90,000	—	—	90,000
All other	183,168	—	(9)	183,159
Total revenue	<u>\$ 1,477,918</u>	<u>\$ 30,417</u>	<u>\$ 16,820</u>	<u>\$ 1,525,155</u>

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Nature of Products and Services

The following is our revenue disaggregated by the nature of products and services and by segment:

	Hughes	ESS	Corporate and Other	Consolidated Total
For the year ended December 31, 2019				
Services and other revenue:				
Services	\$ 1,535,966	\$ 10,464	\$ 6,493	\$ 1,552,924
Lease revenue	50,073	5,793	10,481	66,347
Total services and other revenue	<u>1,586,039</u>	<u>16,257</u>	<u>16,974</u>	<u>1,619,271</u>
Equipment revenue:				
Equipment	115,052	—	107	115,159
Design, development and construction services	145,646	—	—	145,646
Lease revenue	6,005	—	—	6,005
Total equipment revenue	<u>266,703</u>	<u>—</u>	<u>107</u>	<u>266,810</u>
Total revenue	<u>\$ 1,852,742</u>	<u>\$ 16,257</u>	<u>\$ 17,082</u>	<u>\$ 1,886,081</u>

For the year ended December 31, 2018				
Services and other revenue:				
Services	\$ 1,313,059	\$ 21,044	\$ 5,821	\$ 1,339,924
Lease revenue	198,059	6,187	13,058	217,304
Total services and other revenue	<u>1,511,118</u>	<u>27,231</u>	<u>18,879</u>	<u>1,557,228</u>
Equipment revenue:				
Equipment	119,657	—	—	119,657
Design, development and construction services	85,753	—	—	85,753
Total equipment revenue	<u>205,410</u>	<u>—</u>	<u>—</u>	<u>205,410</u>
Total revenue	<u>\$ 1,716,528</u>	<u>\$ 27,231</u>	<u>\$ 18,879</u>	<u>\$ 1,762,638</u>

Lease Revenue

The following is our lease revenue by type of lease:

	For the year ended December 31, 2019
Sales-type lease revenue:	
Revenue at lease commencement	\$ 6,005
Interest income	784
Total sales-type lease revenue	6,789
Operating lease revenue	65,563
Total lease revenue	<u>\$ 72,352</u>

Substantially all of our net investment in sales-type leases consisted of lease receivables totaling \$6.5 million as of December 31, 2019.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

The following table presents future operating lease payments to be received as of December 31, 2019:

	Amounts
Year ending December 31,	
2020	\$ 42,316
2021	33,545
2022	31,666
2023	30,551
2024	28,444
After 2024	123,844
Total lease payments	\$ 290,366

Property and equipment, net and Depreciation and amortization included the following amounts for assets subject to operating leases:

	As of December 31, 2019		For the year ended December 31, 2019	
	Cost	Accumulated Depreciation	Net	Depreciation Expense
Customer premises equipment	\$ 1,377,914	\$ (1,043,431)	\$ 334,483	\$ 182,523
Satellites	104,620	(31,360)	73,260	7,495
Real estate	46,930	(16,048)	30,882	923
Total	\$ 1,529,464	\$ (1,090,839)	\$ 438,625	\$ 190,941

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

NOTE 4. LESSEE ACCOUNTING

The Consolidated Balance Sheets include the following amounts for right-of-use assets and lease liabilities as of December 31, 2019:

		Amounts
Right-of-use assets:		
Operating	\$	114,042
Finance		325,826
Total right-of-use assets	\$	439,868
Lease liabilities:		
Current:		
Operating	\$	14,651
Finance		486
Total current		15,137
Non-current:		
Operating		96,941
Finance		565
Total non-current		97,506
Total lease liabilities	\$	112,643

As of December 31, 2019, we have prepaid our obligations regarding most of our finance right-of-use assets. Finance lease assets are reported net of accumulated amortization of \$57.3 million as of December 31, 2019.

The following are the components of lease cost and weighted average lease terms and discount rates for operating and finance leases:

		For the year ended December 31, 2019
Lease cost:		
Operating lease cost	\$	24,342
Finance lease cost:		
Amortization of right-of-use assets		26,489
Interest on lease liabilities		173
Total finance lease cost		26,662
Short-term lease cost		434
Variable lease cost		8,837
Total lease cost	\$	60,275

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

As of
December 31, 2019

Lease term and discount rate:	
Weighted average remaining lease term:	
Finance leases	2.1 years
Operating leases	10.3 years
Weighted average discount rate:	
Finance leases	11.9%
Operating leases	6.1%

The following table details cash flows from operating and finance leases:

	For the year ended December 31, 2019	
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	\$	22,618
Operating cash flows from finance leases		173
Financing cash flows from finance leases		654

We obtained right-of-use assets in exchange for lease liabilities of \$8.5 million upon commencement of operating leases during the year ended December 31, 2019.

The following table presents future minimum lease payments of our lease liabilities as of December 31, 2019:

	Operating Leases		Finance Leases		Total	
Year ending December 31,						
	2020	\$	20,884	\$	629	\$ 21,513
2021			17,648		487	18,135
2022			15,384		96	15,480
2023			14,373		—	14,373
2024			13,286		—	13,286
After 2024			71,147		—	71,147
Total future minimum lease payments			152,722		1,212	153,934
Less: Interest			(41,130)		(161)	(41,291)
Total lease liabilities		\$	111,592	\$	1,051	\$ 112,643

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

NOTE 5. DISCONTINUED OPERATIONS

BSS Business

The following table presents the financial results of our discontinued operations of the BSS Business:

	For the years ended December 31,		
	2019	2018	2017
Revenue:			
Services and other revenue - DISH Network	\$ 195,942	\$ 305,229	\$ 337,079
Services and other revenue - other	16,260	23,496	23,274
Total revenue	<u>212,202</u>	<u>328,725</u>	<u>360,353</u>
Costs and expenses:			
Cost of services and other	28,057	40,398	62,573
Selling, general and administrative expenses	8,946	159	(4,493)
Depreciation and amortization	97,435	141,062	136,528
Total costs and expenses	<u>134,438</u>	<u>181,619</u>	<u>194,608</u>
Operating income (loss)	77,764	147,106	165,745
Other income (expense):			
Interest expense	(17,865)	(29,280)	(32,851)
Total other income (expense), net	<u>(17,865)</u>	<u>(29,280)</u>	<u>(32,851)</u>
Income (loss) from discontinued operations before income taxes	59,899	117,826	132,894
Income tax benefit (provision), net	<u>(20,498)</u>	<u>(24,097)</u>	<u>129,179</u>
Net income (loss) from discontinued operations	<u>\$ 39,401</u>	<u>\$ 93,729</u>	<u>\$ 262,073</u>

The following table presents the aggregate carrying amounts of assets and liabilities of our discontinued operations of the BSS Business as of December 31, 2018. No assets or liabilities attributable to our discontinued operations were held by us as of December 31, 2019.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

As of
December 31, 2018

Assets:		
Prepays and deposits		\$ 3,486
Current assets of discontinued operations		3,486
Property and equipment, net		880,242
Regulatory authorizations, net		65,615
Other non-current assets, net		16,576
Non-current assets of discontinued operations		962,433
Total assets of discontinued operations		\$ 965,919
Liabilities:		
Current portion of finance lease obligations		\$ 39,995
Accrued interest		2,066
Accrued expenses and other current liabilities		8,075
Current liabilities of discontinued operations		50,136
Finance lease obligations		187,002
Deferred tax liabilities, net		177,944
Other non-current liabilities		41,242
Non-current liabilities of discontinued operations		406,188
Total liabilities of discontinued operations		\$ 456,324

Significant supplemental cash flow information and adjustments to reconcile net income to net cash flow from operating activities for discontinued operations of the BSS business are below:

	For the years ended December 31,		
	2019	2018	2017
Operating activities:			
Net income (loss) from discontinued operations	\$ 39,401	\$ 93,729	\$ 262,073
Depreciation and amortization	97,435	141,062	136,528
Investing activities:			
Expenditures for property and equipment	510	175	699
Financing activities:			
Payment of finance lease obligations	27,203	35,886	32,177
Payment of in-orbit incentive obligations	4,474	4,883	4,727

Terminated or Transferred Related Party Agreements

Effective September 10, 2019, the following agreements were terminated or transferred to DISH Network as part of the BSS Transaction. We have no further obligations and have neither earned additional revenue nor incurred additional expense, as applicable, under or in connection with these agreements after the consummation of the BSS Transaction.

Satellite Capacity Leased to DISH Network. We entered into certain agreements to lease satellite capacity pursuant to which we provided satellite services to DISH Network on certain satellites, as listed below, owned or leased by us.

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The fees for the services provided under these agreements depended, among other things, upon the orbital location of the applicable satellite, the number of transponders that provided services on the applicable satellite and the length of the service arrangements.

EchoStar VII, EchoStar X, EchoStar XI and EchoStar XIV. In March 2014, we began leasing certain satellite capacity to DISH Network on the EchoStar VII satellite, the EchoStar X satellite, the EchoStar XI satellite and the EchoStar XIV satellite.

EchoStar XII. DISH Network leased satellite capacity from us on the EchoStar XII satellite.

EchoStar XVI. In December 2009, we entered into an agreement to lease satellite capacity to DISH Network, pursuant to which DISH Network leased satellite capacity from us on the EchoStar XVI satellite beginning in January 2013.

Nimiq 5 Agreement. In September 2009, we entered into an agreement with Telesat Canada to lease satellite capacity from Telesat Canada on all 32 direct broadcast satellite ("DBS") transponders on the Nimiq 5 satellite at the 72.7 degree west longitude orbital location (the "Telesat Transponder Agreement"). In September 2009, we entered into an agreement with DISH Network, pursuant to which DISH Network leased satellite capacity from us on all 32 of the DBS transponders covered by the Telesat Transponder Agreement (the "DISH Nimiq 5 Agreement"). Under the terms of the DISH Nimiq 5 Agreement, DISH Network made certain monthly payments to us that commenced in September 2009, when the Nimiq 5 satellite was placed into service.

QuetzSat-1 Agreement. In November 2008, we entered into an agreement to lease satellite capacity from SES Latin America, which provided, among other things, for the provision by SES Latin America to us of leased satellite capacity on 32 DBS transponders on the QuetzSat-1 satellite. Concurrently, in 2008, we entered into an agreement pursuant to which DISH Network leased from us satellite capacity on 24 of the DBS transponders on the QuetzSat-1 satellite. The QuetzSat-1 satellite was launched in September 2011 and was placed into service in November 2011 at the 67.1 degree west longitude orbital location. In January 2013, the QuetzSat-1 satellite was moved to the 77 degree west longitude orbital location. In February 2013, we and DISH Network entered into an agreement pursuant to which we leased back from DISH Network certain satellite capacity on five DBS transponders on the QuetzSat-1 satellite.

TT&C Agreement. Effective January 2012, we entered into a TT&C agreement pursuant to which we provided TT&C services to DISH Network, which we subsequently amended (the "2012 TT&C Agreement"). The fees for services provided under the 2012 TT&C Agreement were calculated at either: (i) a fixed fee or (ii) cost plus a fixed margin, which varied depending on the nature of the services provided.

Real Estate Leases to DISH Network. We entered into lease agreements pursuant to which DISH Network leased certain real estate from us. The rent on a per square foot basis each of the leases or subsequent amendments was comparable to per square foot rental rates of similar commercial property in the same geographic area at the time of the leases or subsequent amendments and DISH Network was responsible for its portion of the taxes, insurance, utilities and maintenance of the premises. These components of the BSS Transaction do not qualify for discontinued operations treatment, and therefore the revenue from these lease agreements has not been treated as discontinued operations.

Santa Fe Lease Agreement. DISH Network leased from us all of 5701 S. Santa Fe Dr., Littleton, Colorado. In connection with the BSS Transaction, we transferred this property to DISH Network.

Cheyenne Lease Agreement. Prior to the Share Exchange, we leased to DISH Network certain space at 530 EchoStar Drive, Cheyenne, Wyoming. In connection with the Share Exchange, we transferred ownership of a portion of this property to DISH Network and we and DISH Network amended this agreement to, among other things, provide for a continued lease to DISH Network of the portion of the property we retained (the "Cheyenne Data Center"). In connection with the BSS Transaction, we transferred the Cheyenne Data Center to DISH Network.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Real Estate Leases from DISH Network. We entered into a lease agreement pursuant to which we leased from DISH Network certain space at 801 N. DISH Dr. in Gilbert, Arizona for the Satellite Operations Center and Satellite Access Center. The rent on a per square foot basis was comparable to per square foot rental rates of similar commercial property in the same geographic area at the time of the leases or subsequent amendments and included our portion of the taxes, insurance, utilities and certain maintenance of the premises. In connection with the BSS Transaction, we terminated this lease and transferred the Gilbert Satellite Operations Center, including any and all equipment, software, processes, software licenses, hardware licenses, furniture and technical documentation located within, to DISH Network.

Share Exchange Transaction

The following table presents the financial results of our discontinued operations of the EchoStar Technologies businesses for the year ended December 31, 2017:

	Amount
Revenue:	
Equipment, services and other revenue - DISH Network	\$ 143,118
Equipment, services and other revenue - other	10,344
Total revenue	153,462
Costs and expenses:	
Cost of equipment, services and other	121,967
Selling, general and administrative expenses	5,439
Research and development expenses	4,635
Depreciation and amortization	11,659
Total costs and expenses	143,700
Operating income (loss)	9,762
Other income (expense):	
Interest expense	(15)
Equity in earnings (losses) of unconsolidated affiliates, net	(1,159)
Other, net	(57)
Total other income (expense), net	(1,231)
Income (loss) from discontinued operations before income taxes	8,531
Income tax benefit (provision), net	(22)
Net income (loss) from discontinued operations	\$ 8,509

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Significant supplemental cash flow information and adjustments to reconcile net income to net cash flow from operating activities for discontinued operations of the EchoStar Technologies businesses for the year ended December 31, 2017 are below:

	Amounts
Operating activities:	
Net income (loss) from discontinued operations	\$ 8,509
Depreciation and amortization	11,659
Investing activities:	
Expenditures for property and equipment	12,516
Financing activities:	
Payment of finance lease obligations	607

Terminated or Transferred Related Party Agreements and Investments

Effective February 2017, the following agreements or investments were terminated or transferred to DISH Network as part of the Share Exchange. We have no further obligations and have neither earned additional revenue nor incurred additional expense, as applicable, under or in connection with such agreements and investments after February 2017.

Set-Top Box Application Development Agreement. In November 2012, one of our former subsidiaries and DISH Network entered into a set-top box application development agreement (the "Application Development Agreement") pursuant to which we provided DISH Network with certain services relating to the development of web-based applications for set-top boxes. The fees for services provided under the Application Development Agreement were calculated at our cost of providing the relevant service plus a fixed margin, which depended on the nature of the services provided.

Receiver Agreement. Effective January 2012, one of our former subsidiaries and DISH Network entered into a receiver agreement (the "2012 Receiver Agreement"), pursuant to which DISH Network had the right, but not the obligation, to purchase digital set-top boxes, related accessories, and other equipment from us. The 2012 Receiver Agreement replaced the receiver agreement one of our former subsidiaries entered into with DISH Network in connection with our spin-off from DISH in 2008 (the "Spin-off"). The 2012 Receiver Agreement allowed DISH Network to purchase digital set-top boxes, related accessories, and other equipment from us either (i) at cost (decreasing as we reduced costs and increasing as costs increased) plus a dollar mark-up which depended upon the cost of the product subject to a collar on our mark-up or (ii) at cost plus a fixed margin, which depended on the nature of the equipment purchased. Under the 2012 Receiver Agreement, our margins would have increased if we were able to reduce the costs of our digital set-top boxes and our margins would have reduced if these costs increased. One of our former subsidiaries provided DISH Network with standard manufacturer warranties for the goods sold under the 2012 Receiver Agreement. Additionally, the 2012 Receiver Agreement included an indemnification provision, whereby the parties agreed to indemnify each other for certain intellectual property matters.

Broadcast Agreement. Effective January 2012, one of our former subsidiaries and DISH Network entered into a broadcast agreement (the "2012 Broadcast Agreement"), pursuant to which we provided certain broadcast services to DISH Network, including teleport services such as transmission and downlinking, channel origination services, and channel management services. The fees for the services provided under the 2012 Broadcast Agreement were calculated at either (a) our cost of providing the relevant service plus a fixed dollar fee, which was subject to certain adjustments or (b) our cost of providing the relevant service plus a fixed margin, depending on the nature of the services provided.

Broadcast Agreement for Certain Sports Related Programming. In May 2010, one of our former subsidiaries and DISH Network entered into a broadcast agreement pursuant to which we provided certain broadcast services to DISH Network in connection with its carriage of certain sports related programming. The fees for the broadcast services provided under this agreement depended, among other things, upon the cost to develop and provide such services.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Gilbert Lease Agreement. DISH Network leased certain space from us at 801 N. DISH Drive, Gilbert, Arizona. The rent on a per square foot basis for this lease was comparable to per square foot rental rates of similar commercial property in the same geographic area at the time of the lease or subsequent amendments and DISH Network was responsible for its portion of the taxes, insurance, utilities and maintenance of the premises.

Product Support Agreement. In connection with the Spin-off, one of our former subsidiaries entered into a product support agreement pursuant to which DISH Network had the right, but not the obligation, to receive product support from us (including certain engineering and technical support services) for all set-top boxes and related accessories that we had previously sold to DISH Network. The fees for the services provided under the product support agreement were calculated at cost plus a fixed margin, which varied depending on the nature of the services provided. The term of the product support agreement was the economic life of such set-top boxes and related accessories, unless terminated earlier.

DISHOnline.com Services Agreement. Effective January 2010, DISH Network entered into a two-year agreement with one of our former subsidiaries pursuant to which DISH Network received certain services associated with an online video portal. The fees for the services provided under this services agreement depended, among other things, upon the cost to develop and operate such services.

DISH Remote Access Services Agreement. Effective February 2010, one of our former subsidiaries entered into an agreement with DISH Network pursuant to which DISH Network received, among other things, certain remote digital video recorder ("DVR") management services. The fees for the services provided under this services agreement depended, among other things, upon the cost to develop and operate such services.

SlingService Services Agreement. Effective February 2010, one of our former subsidiaries entered into an agreement with DISH Network pursuant to which DISH Network received certain services related to placeshifting. The fees for the services provided under this services agreement depended, among other things, upon the cost to develop and operate such services.

XiP Encryption Agreement. In July 2012, we entered into an encryption agreement with DISH Network for our whole-home high definition ("HD") DVR line of set-top boxes (the "XiP Encryption Agreement") pursuant to which we provided certain security measures on our whole-home HD DVR line of set-top boxes to encrypt the content delivered to the set-top box via a smart card and secure the content between set-top boxes. The XiP Encryption Agreement's term ended on the same day as the 2012 Receiver Agreement. The fees for the services provided under the XiP Encryption Agreement were calculated on a monthly basis based on the number of receivers utilizing such security measures each month.

Sling TV Holding. Effective July 2012, we and DISH Network formed Sling TV Holding, which was owned two-thirds by DISH Network and one-third by us. Sling TV Holding was formed to develop and commercialize certain advanced technologies. At that time, we, DISH Network and Sling TV Holding entered into the following agreements with respect to Sling TV Holding: (i) a contribution agreement pursuant to which we and DISH Network contributed certain assets in exchange for our respective ownership interests in Sling TV Holding; (ii) a limited liability company operating agreement ("Operating Agreement"), which provided for the governance of Sling TV Holding; and (iii) a commercial agreement ("Commercial Agreement") pursuant to which, among other things, Sling TV Holding had (a) certain rights and corresponding obligations with respect to its business and (b) the right, but not the obligation, to receive certain services from us and DISH Network, respectively. Additionally, the spouse of Mr. Vivek Khemka, who was the President - EchoStar Technologies L.L.C. during portions of 2016 and through February 2017, was employed during 2016 as Vice President of Business Development and Operations of Sling TV Holding.

Effective August 2014, we and Sling TV Holding entered into an exchange agreement ("Exchange Agreement") pursuant to which, among other things, Sling TV Holding distributed certain assets to us and we reduced our interest in Sling TV Holding to a 10% non-voting interest. As a result, DISH Network had a 90% equity interest and a 100% voting interest in Sling TV Holding. In addition, we, DISH Network and Sling TV Holding amended and restated the Operating Agreement, primarily to reflect the changes implemented by the Exchange Agreement. Finally, we, DISH Network and Sling TV Holding amended and restated the Commercial Agreement, pursuant to which, among other things, Sling TV Holding (i) had certain rights and corresponding obligations with respect to its business, (ii) had the right, but not the

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obligation, to receive certain services from us and DISH Network and (iii) had a license from us to use certain of the assets distributed to us as part of the Exchange Agreement.

Remanufactured Receiver and Services Agreement. In connection with the Spin-off, one of our former subsidiaries entered into a remanufactured receiver and services agreement with DISH Network pursuant to which we had the right, but not the obligation, to purchase remanufactured receivers and related components from DISH Network at cost plus a fixed margin, which varied depending on the nature of the equipment purchased.

Intellectual Property Matters Agreement. We entered into an intellectual property matters agreement (the "Intellectual Property Matters Agreement") with DISH Network in connection with the Spin-off. The Intellectual Property Matters Agreement governed our relationship with DISH Network with respect to patents, trademarks and other intellectual property. Pursuant to the Intellectual Property Matters Agreement, DISH Network irrevocably assigned to us all right, title and interest in certain patents, trademarks and other intellectual property necessary for the operation of our set-top box business. In addition, the agreement permitted us to use, in the operation of our set-top box business, certain other intellectual property currently owned or licensed by DISH Network. In addition, DISH Network was prohibited from using the "EchoStar" name as a trademark, except in certain limited circumstances. Similarly, the Intellectual Property Matters Agreement provided that we would not make any use of the name or trademark "DISH Network" or any other trademark owned by DISH Network, except in certain circumstances.

TiVo. In April 2011, we and DISH Network entered into a settlement agreement with TiVo, Inc. ("TiVo"). The settlement resolved all pending litigation between us and DISH Network, on the one hand, and TiVo, on the other hand, including litigation relating to alleged patent infringement involving certain DISH Network DVRs. Under the settlement agreement, all pending litigation was dismissed with prejudice and all injunctions that permanently restrain, enjoin or compel any action by us or DISH Network were dissolved. We and DISH Network were jointly responsible for making payments to TiVo in the aggregate amount of \$500 million, including an initial payment of \$300 million and the remaining \$200 million in six equal annual installments between 2012 and 2017. Pursuant to the terms and conditions of the agreements entered into in connection with the Spin-off, DISH Network made the initial payment to TiVo in May 2011, except for the contribution from us totaling approximately \$10 million, representing an allocation of liability relating to our sales of DVR-enabled receivers to an international customer. Subsequent payments were allocated between us and DISH Network based on historical sales of certain licensed products, with EchoStar being responsible for 5% of each annual payment.

Sling Trademark License Agreement. In December 2014, Sling TV Holding entered into an agreement with Sling Media, Inc., our former subsidiary, pursuant to which Sling TV Holding had the right, for a fixed fee, to use certain trademarks, domain names and other intellectual property related to the "Sling" trademark.

NagraStar L.L.C. Prior to March 2017, we owned 50% of NagraStar, a joint venture that was the primary provider of encryption and related security technology used in the set-top boxes produced by our former EchoStar Technologies segment. We accounted for our investment in NagraStar using the equity method.

SmarDTV. Prior to March 2017, we owned approximately 23% of SmarDTV, which we accounted for using the equity method. Pursuant to our agreements with SmarDTV and its subsidiaries, our former EchoStar Technologies segment purchased engineering services from and paid royalties to SmarDTV and its subsidiaries.

NOTE 6. BUSINESS COMBINATIONS

In November 2019, we consummated the Yahsat Brazil JV Transaction. The combined business provides broadband internet services and enterprise solutions in Brazil using the Telesat T19V satellite, the Eutelsat 65W satellite and Yahsat's Al Yah 3 satellite. The results of operations related to the business we acquired in the Yahsat Brazil JV Transaction have been included in these Consolidated Financial Statements from the date of acquisition. For the year ended December 31, 2019, we incurred \$1.6 million of costs associated with the closing of the Yahsat Brazil JV Transaction.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

All assets and liabilities acquired from Yahsat in the Yahsat Brazil JV Transaction have been recorded at fair value. The following table summarizes the preliminary allocations of purchase price:

		Amounts
Assets:		
Cash and cash equivalents	\$	7,858
Other current assets		7,106
Property and equipment		88,358
Regulatory authorization		4,498
Goodwill		2,128
Other long-term assets		1,502
Total assets	\$	111,450
Liabilities:		
Accounts payable and accrued liabilities	\$	6,516
Other current liabilities		2,159
Total liabilities	\$	8,675
Total purchase price ⁽¹⁾	\$	102,775

(1) Based on the value determined for the equity ownership interest issued by our Brazilian subsidiary as consideration for the business acquired by us in the Yahsat Brazil JV Transaction.

The preliminary valuation of assets we acquired and liabilities we assumed in the Yahsat Brazil JV Transaction were derived using primarily unobservable Level 3 inputs, which require significant management judgment and estimation, and resulted in identifiable assets as follows:

		Amounts
Satellite payload	\$	50,738
Regulatory authorization		4,498
Total	\$	55,236

The satellite payload asset and regulatory authorization were valued using an income approach and will be being amortized over seven and 11 years, respectively.

We recognized goodwill in connection with the Yahsat Brazil JV Transaction of \$2.1 million, including a currency translation adjustment of \$0.7 million. The goodwill is attributable to expected synergies, the projected long-term business growth in current and new markets and an assembled workforce. This goodwill has been allocated entirely to our Hughes segment.

NOTE 7. EARNINGS PER SHARE

We present basic and diluted earnings or losses per share ("EPS") for our Class A and Class B common stock. Basic EPS for our Class A and Class B common stock excludes potential dilution and is computed by dividing *Net income (loss) attributable to EchoStar Corporation common stock* by the weighted-average number of common shares outstanding for the period. Diluted EPS reflects the potential dilution that could occur if shares of common stock were issued pursuant to our stock-based compensation awards. The potential dilution from common stock awards is computed using the treasury stock method based on the average market value of our Class A common stock during the period. The calculation of our diluted weighted-average common shares outstanding excluded options to purchase

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shares of our Class A common stock, the effect of which would be anti-dilutive, of 4.8 million, 5.0 million and 1.0 million shares for the years ended December 31, 2019, 2018 and 2017, respectively.

The following table presents the calculation of basic and diluted EPS:

	For the years ended December 31,		
	2019	2018	2017
Net income (loss) attributable to EchoStar Corporation common stock:			
Net income (loss) from continuing operations	\$ (102,318)	\$ (134,204)	\$ 123,188
Net income (loss) from discontinued operations	39,401	93,729	270,582
Net income (loss) attributable to EchoStar Corporation common stock	<u>\$ (62,917)</u>	<u>\$ (40,475)</u>	<u>\$ 393,770</u>
Weighted-average common shares outstanding:			
Class A and B common stock:			
Basic	96,738	96,250	95,425
Dilutive impact of stock awards outstanding	—	—	1,316
Diluted	<u>96,738</u>	<u>96,250</u>	<u>96,741</u>
Earnings (losses) per share:			
Class A and B common stock:			
Basic:			
Continuing operations	\$ (1.06)	\$ (1.39)	\$ 1.29
Discontinued operations	0.41	0.97	2.84
Total basic earnings (loss) per share	<u>\$ (0.65)</u>	<u>\$ (0.42)</u>	<u>\$ 4.13</u>
Diluted:			
Continuing operations	\$ (1.06)	\$ (1.39)	\$ 1.27
Discontinued operations	0.41	0.97	2.80
Total diluted earnings (loss) per share	<u>\$ (0.65)</u>	<u>\$ (0.42)</u>	<u>\$ 4.07</u>

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

NOTE 8. OTHER COMPREHENSIVE INCOME (LOSS) AND RELATED TAX EFFECTS

The changes in the balances of *Accumulated other comprehensive income (loss)* by component were as follows:

	Cumulative Foreign Currency Translation Adjustments	Unrealized Gain (Loss) On Available-For-Sale Securities	Other	Accumulated Other Comprehensive Income (Loss)
Balance, December 31, 2017	\$ (119,430)	\$ (10,801)	\$ 77	\$ (130,154)
Cumulative effect of accounting changes	—	10,467	—	10,467
Balance, January 1, 2018	(119,430)	(334)	77	(119,687)
Other comprehensive income (loss) before reclassifications	(34,399)	(962)	(1,910)	(37,271)
Amounts reclassified to net income (loss)	32,136	(278)	—	31,858
Other comprehensive income (loss)	(2,263)	(1,240)	(1,910)	(5,413)
Balance, December 31, 2018	(121,693)	(1,574)	(1,833)	(125,100)
Other comprehensive income (loss) before reclassifications	(483)	2,571	1,466	3,554
Amounts reclassified to net income (loss)	—	(592)	—	(592)
Other comprehensive income (loss)	(483)	1,979	1,466	2,962
Balance, December 31, 2019	\$ (122,176)	\$ 405	\$ (367)	\$ (122,138)

The amounts reclassified to net income (loss) related to unrealized gain (loss) on available-for-sale securities in the table above are included in *Gains (losses) on investments, net* in the Consolidated Statements of Operations.

Other comprehensive income includes deferred tax benefits for foreign currency translation losses related to assets that were transferred from a foreign subsidiary to a domestic subsidiary of \$7.3 million for year ended December 31, 2017. There were no similar transactions in 2019 or 2018.

NOTE 9. MARKETABLE INVESTMENT SECURITIES

Our marketable investment securities portfolio consists of the following debt and equity instruments:

	As of December 31,	
	2019	2018
Marketable investment securities:		
Debt securities:		
Corporate bonds	\$ 577,570	\$ 1,735,653
Other debt securities	335,580	464,997
Total debt securities	913,150	2,200,650
Equity securities		
Total marketable investment securities	948,716	2,291,626
Less: Restricted marketable investment securities	8,093	9,474
Total marketable investment securities	\$ 940,623	\$ 2,282,152

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Debt Securities

Our corporate bond portfolio includes debt instruments issued by individual corporations, primarily in the industrial and financial services industries. Our other debt securities portfolio includes investments in various debt instruments, including U.S. government bonds, commercial paper and mutual funds.

The following table is a summary of our available-for-sale debt securities:

	Amortized	Unrealized		Estimated
	Cost	Gains	Losses	Fair Value
As of December 31, 2019				
Corporate bonds	\$ 567,926	\$ 518	\$ (2)	\$ 568,442
Other debt securities	335,572	8	—	335,580
Total available-for-sale debt securities	<u>\$ 903,498</u>	<u>\$ 526</u>	<u>\$ (2)</u>	<u>\$ 904,022</u>
As of December 31, 2018				
Corporate bonds	\$ 1,689,093	\$ 318	\$ (1,896)	\$ 1,687,515
Other debt securities	464,993	7	(3)	464,997
Total available-for-sale debt securities	<u>\$ 2,154,086</u>	<u>\$ 325</u>	<u>\$ (1,899)</u>	<u>\$ 2,152,512</u>

As of December 31, 2019 and 2018, corporate bonds for which we have elected the fair value option have fair values of \$9.1 million and \$48.1 million, respectively. We recognized gains of \$6.7 million and \$4.2 million on these securities for the years ended December 31, 2019 and 2018, respectively. We had no debt securities that were accounted for using the fair value option during the year ended December 31, 2017.

As of December 31, 2019, we have \$904.0 million of available-for-sale debt securities with contractual maturities of one year or less and zero with contractual maturities greater than one year.

Equity Securities

Our marketable equity securities consist primarily of shares of common stock of public companies. Prior to January 1, 2018, we classified our marketable equity securities as available-for-sale or trading securities, depending on our investment strategy for the securities. As of December 31, 2017, our marketable equity securities consisted of available-for-sale securities with a fair value of \$87.1 million and trading securities with a fair value of \$52.5 million. Our available-for-sale securities as of December 31, 2017 reflected an adjusted cost basis of \$97.5 million and unrealized gains and losses of \$7.9 million and \$18.4 million, respectively, which were recognized as *Unrealized gains (losses) on available-for-sale securities* in the Consolidated Statements of Comprehensive Income (Loss). Substantially all unrealized losses on our available-for-sale securities related to securities that were in a continuous loss position for less than 12 months. We recognized a \$3.3 million other-than-temporary impairment during the year ended December 31, 2017 on one of our available-for-sale securities which had experienced a decline in market value as a result of adverse developments. For the year ended December 31, 2017, *Gains (losses) on investments, net* in the Consolidated Statements of Operations included gains of \$42.6 million related to trading securities that we held as of December 31, 2017. For trading securities, we recognized periodic changes in the fair value of the securities in *Gains (losses) on investments, net* in the Consolidated Statements of Operations.

Effective January 1, 2018, we began accounting for investments in equity securities at their fair value and recognizing unrealized gains and losses in *Gains (losses) on investments, net* in the Consolidated Statements of Operations. *Gains (losses) on investments, net* in the Consolidated Statements of Operations related to equity securities that we held were \$53.9 million of net gains and \$16.6 million of net losses for the years ended December 31, 2019 and 2018, respectively. The fair value of our equity securities was \$35.6 million and \$91.0 million as of December 31, 2019 and 2018, respectively.

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Sales of Available-for-Sale Securities

Proceeds from sales of our available-for-sale securities, including securities accounted for using the fair value option, were \$436.0 million, \$150.9 million and \$31.0 million for the years ended December 31, 2019, 2018 and 2017, respectively. We recognized as a result of such sales \$0.6 million of gains, zero gains or losses and \$2.8 million of gains for the years ended December 31, 2019, 2018 and 2017, respectively. Sales of securities accounted for using the fair value option do not result in gains or losses as we recognize unrealized gains and losses on such securities prior to the time of sale.

Fair Value Measurements

Our marketable investment securities are summarized in the table below. Certain of our investments in debt and equity instruments have historically experienced volatility. As of December 31, 2019 and 2018, we did not have any investments that were categorized within Level 3 of the fair value hierarchy.

	As of December 31,					
	2019			2018		
	Level 1	Level 2	Total	Level 1	Level 2	Total
Debt securities:						
Corporate bonds	\$ —	\$ 577,570	\$ 577,570	\$ —	\$ 1,735,653	\$ 1,735,653
Other debt securities	8,093	327,487	335,580	9,474	455,523	464,997
Total debt securities	8,093	905,057	913,150	9,474	2,191,176	2,200,650
Equity securities	27,933	7,633	35,566	85,298	5,678	90,976
Total marketable investment securities	<u>\$ 36,026</u>	<u>\$ 912,690</u>	<u>\$ 948,716</u>	<u>\$ 94,772</u>	<u>\$ 2,196,854</u>	<u>\$ 2,291,626</u>

NOTE 10. INVENTORY

Inventory consists of the following:

	As of December 31,	
	2019	2018
Raw materials	\$ 4,240	\$ 4,856
Work-in-process	6,979	13,901
Finished goods	68,402	56,622
Total inventory	<u>\$ 79,621</u>	<u>\$ 75,379</u>

NOTE 11. PROPERTY AND EQUIPMENT

Our property and equipment, net consisted of the following:

	As of December 31,	
	2019	2018
Property and equipment, net:		
Satellites, net	\$ 1,749,576	\$ 1,764,454
Other property and equipment, net	779,162	770,212
Total property and equipment, net	<u>\$ 2,528,738</u>	<u>\$ 2,534,666</u>

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Satellites

As of December 31, 2019, our operating satellite fleet consisted of 10 satellites, seven of which are owned and three of which are leased. They are all in geosynchronous orbit, approximately 22,300 miles above the equator. In connection with the BSS Transaction, seven of our previously owned satellites and the leases for two of our previously leased satellites were transferred to DISH Network (see *Note 1. Organization and Business Activities* and *Note 5. Discontinued Operations*).

Satellite	Segment	Launch Date	Nominal Degree Orbital Location (Longitude)	Depreciable Life (In Years)
Owned:				
SPACEWAY 3 ⁽¹⁾	Hughes	August 2007	95 W	10
EchoStar XVII	Hughes	July 2012	107 W	15
EchoStar XIX	Hughes	December 2016	97.1 W	15
Al Yah 3 ⁽²⁾	Hughes	January 2018	20 W	7
EchoStar IX ⁽³⁾	ESS	August 2003	121 W	12
EUTELSAT 10A ("W2A") ⁽⁴⁾	Corporate and Other	April 2009	10 E	-
EchoStar XXI	Corporate and Other	June 2017	10.25 E	15
Finance leases:				
Eutelsat 65 West A	Hughes	March 2016	65 W	15
Telesat T19V	Hughes	July 2018	63 W	15
EchoStar 105/SES-11	ESS	October 2017	105 W	15

(1) Depreciable life represents the remaining useful life as of June 8, 2011, the date EchoStar completed the Hughes Acquisition.

(2) Upon consummation of our joint venture with Yahsat in Brazil in November 2019, we acquired the Brazilian Ka-band payload on this satellite. Depreciable life represents the remaining useful life as of November 2019.

(3) We own the Ka-band and Ku-band payloads on this satellite.

(4) We acquired the S-band payload on this satellite, which, prior to the acquisition in December 2013, experienced an anomaly at the time of the launch. As a result, the S-band payload is not fully operational.

Satellites, net consisted of the following:

	Depreciable Life (In Years)	As of December 31,	
		2019	2018
Satellites, net:			
Satellites - owned	7 to 15	\$ 1,816,303	\$ 1,760,252
Satellites - acquired under finance leases	10 to 15	381,163	385,592
Construction in progress	—	365,133	277,583
Total satellites		2,562,599	2,423,427
Accumulated depreciation		(813,023)	(658,973)
Total satellites, net		\$ 1,749,576	\$ 1,764,454

As of December 31, 2019 and 2018, accumulated depreciation included amounts for satellites acquired under finance leases of \$56.4 million and \$31.5 million, respectively.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Construction in Progress

In August 2017, we entered into a contract for the design and construction of the EchoStar XXIV satellite, a new, next-generation, high throughput geostationary satellite, with a planned 2021 launch. The EchoStar XXIV satellite is primarily intended to provide additional capacity for our HughesNet service in North, Central and South America as well as enterprise broadband services. Capital expenditures associated with the construction and launch of the EchoStar XXIV satellite are included in Corporate and Other in our segment reporting.

Depreciation and amortization expense and capitalized interest associated with our satellites consisted of the following:

	For the years ended December 31,		
	2019	2018	2017
Depreciation and amortization expense:			
Satellites - owned	\$ 130,705	\$ 124,987	\$ 93,064
Satellites acquired under finance leases	25,755	20,269	9,962
Total depreciation and amortization expense	<u>\$ 156,460</u>	<u>\$ 145,256</u>	<u>\$ 103,026</u>
Capitalized interest	<u>\$ 22,576</u>	<u>\$ 18,285</u>	<u>\$ 52,015</u>

Satellite Anomalies and Impairments

We are not aware of any anomalies with respect to our owned or leased satellites or payloads that have had any significant adverse effect on their remaining useful lives, the commercial operation of the satellites or payloads or our operating results or financial position as of and for the year ended December 31, 2019.

Satellite Insurance

We generally do not carry in-orbit insurance on our satellites or payloads because we have assessed that the cost of insurance is not economical relative to the risk of failures. Therefore, we generally bear the risk of any in-orbit failures. Pursuant to the terms of the agreements governing certain portions of our indebtedness and our joint venture agreements with Yahsat, we are required, subject to certain limitations on coverage, to maintain only for the SPACEWAY 3 satellite, the EchoStar XVII satellite and the Al Yah 3 Brazilian payload, insurance or other contractual arrangements during the commercial in-orbit service of such satellite. We were previously required to maintain similar insurance or other contractual arrangements for the EchoStar XVI satellite, which we transferred to DISH Network pursuant to the BSS Transaction. Our other satellites and payloads, either in orbit or under construction, are not covered by launch or in-orbit insurance or other contractual arrangements. We will continue to assess circumstances going forward and make insurance-related decisions on a case-by-case basis.

Fair Value of In-Orbit Incentives

As of December 31, 2019 and 2018, the fair values of our in-orbit incentive obligations from our continuing operations, based on measurements categorized within Level 2 of the fair value hierarchy, approximated their carrying amounts of \$57.0 million and \$57.9 million, respectively.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Other Property and Equipment, Net

Other property and equipment, net consisted of the following:

	Depreciable Life (In Years)	As of December 31,	
		2019	2018
Other property and equipment, net:			
Land	—	\$ 28,943	\$ 33,571
Buildings and improvements	1 to 40	113,938	170,816
Furniture, fixtures, equipment and other	1 to 12	855,274	791,035
Customer premises equipment	2 to 4	1,377,914	1,159,977
Construction in progress		52,986	29,443
Total other property and equipment		2,429,055	2,184,842
Accumulated depreciation		(1,649,893)	(1,414,630)
Other property and equipment, net		\$ 779,162	\$ 770,212

Depreciation expense associated with our other property and equipment consisted of the following:

	For the years ended December 31,		
	2019	2018	2017
Other property and equipment depreciation expense:			
Buildings and improvements	\$ 5,791	\$ 11,285	\$ 16,976
Furniture, fixtures, equipment and other	90,885	82,945	72,208
Customer premises equipment	194,906	174,749	146,562
Total depreciation expense	\$ 291,582	\$ 268,979	\$ 235,746

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

NOTE 12. REGULATORY AUTHORIZATIONS

Our regulatory authorizations consisted of the following:

	Finite lived			Indefinite lived	Total
	Cost	Accumulated Amortization	Total		
As of December 31, 2016	\$ 87,959	\$ (14,983)	\$ 72,976	\$ 406,042	\$ 479,018
Impairment	—	—	—	(6,000)	(6,000)
Amortization expense	—	(5,097)	(5,097)	—	(5,097)
Currency translation adjustments	4,662	(1,262)	3,400	—	3,400
As of December 31, 2017	92,621	(21,342)	71,279	400,042	471,321
Impairment	(37,476)	7,848	(29,628)	—	(29,628)
Amortization expense	—	(5,190)	(5,190)	—	(5,190)
Currency translation adjustments	(8,358)	1,894	(6,464)	—	(6,464)
As of December 31, 2018	46,787	(16,790)	29,997	400,042	430,039
Additions	12,833	—	12,833	39,491	52,324
Amortization expense	—	(3,672)	(3,672)	—	(3,672)
Currency translation adjustments	(1,169)	318	(851)	758	(93)
As of December 31, 2019	\$ 58,451	\$ (20,144)	\$ 38,307	\$ 440,291	\$ 478,598

Weighted average useful life 13 years

Finite Lived Assets

In November 2019, we were granted an S-band spectrum license for terrestrial rights in Mexico for \$7.9 million. The acquired asset is subject to amortization over a period of 15 years.

Upon consummation of our joint venture with Yahsat in Brazil in November 2019, we acquired Ka-band spectrum rights for \$4.5 million, which are subject to amortization over a period of 11 years.

During the year ended December 31, 2018, impairment of long-lived assets was \$65.2 million, which was primarily attributable to the determination that the fair value of the 45 degree west longitude regulatory authorization was de minimis. Our recognition of a loss on the assets and the in-substance liquidation of the business related to this regulatory authorization are as follows: (i) \$29.6 million related to the regulatory authorization; (ii) \$3.5 million related to other assets; and (iii) \$32.1 million of foreign currency translation adjustment.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Future Amortization

As of December 31, 2019, our estimated future amortization of our regulatory authorizations with finite lives was as follows:

	<u>Amount</u>
For the years ending December 31,	
2020	\$ 4,467
2021	4,458
2022	4,458
2023	4,458
2024	4,467
Thereafter	<u>15,999</u>
Total	<u>\$ 38,307</u>

Indefinite Lived Assets

In October 2019, we acquired Sirion Global Pty Ltd., which we have renamed EchoStar Global Australia Pty Ltd ("EchoStar Global"), which holds global S-band non-geostationary stationary satellite spectrum rights for mobile satellite services. We acquired the global S-band non-geostationary satellite spectrum rights for \$39.5 million, of which \$26.5 million were made in cash payments and the remainder relate to deferred tax liabilities. The acquired spectrum rights are not subject to amortization.

As of December 31, 2016, our regulatory authorizations with indefinite lives included \$6.0 million for contractual rights to utilize certain frequencies, in addition to those specified in the Brazilian license, at the 45 degree west longitude orbital location acquired in 2012. In 2017, we determined that certain actions required to utilize the frequencies had become impractical with the passage of time and, as a result of these circumstances, we determined that the fair value of those contractual rights was de minimis and we recognized a \$6.0 million impairment loss.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

NOTE 13. OTHER INTANGIBLE ASSETS

Our other intangible assets consisted of the following:

	<u>Customer Relationships</u>	<u>Patents</u>	<u>Trademarks and Licenses</u>	<u>Total</u>
Cost:				
As of December 31, 2016	\$ 270,300	\$ 60,835	\$ 29,700	\$ 360,835
Additions	—	465	—	465
As of December 31, 2017	270,300	61,300	29,700	361,300
Write-off	—	(17)	—	(17)
As of December 31, 2018	270,300	61,283	29,700	361,283
As of December 31, 2019	\$ 270,300	\$ 61,283	\$ 29,700	\$ 361,283
Accumulated amortization:				
As of December 31, 2016	\$ (214,544)	\$ (57,266)	\$ (8,291)	\$ (280,101)
Amortization expense	(17,098)	(3,661)	(1,485)	(22,244)
As of December 31, 2017	(231,642)	(60,927)	(9,776)	(302,345)
Amortization expense	(13,145)	(94)	(1,485)	(14,724)
Write-off	—	17	—	17
As of December 31, 2018	(244,787)	(61,004)	(11,261)	(317,052)
Amortization expense	(13,146)	(93)	(1,485)	(14,724)
As of December 31, 2019	\$ (257,933)	\$ (61,097)	\$ (12,746)	\$ (331,776)
Carrying amount:				
As of December 31, 2016	\$ 55,756	\$ 3,569	\$ 21,409	\$ 80,734
As of December 31, 2017	\$ 38,658	\$ 373	\$ 19,924	\$ 58,955
As of December 31, 2018	\$ 25,513	\$ 279	\$ 18,439	\$ 44,231
As of December 31, 2019	\$ 12,367	\$ 186	\$ 16,954	\$ 29,507

Weighted average useful life	8 years	6 years	20 years
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Future Amortization

As of December 31, 2019, our estimated future amortization of other intangible assets was as follows:

	<u>Amount</u>
For the years ending December 31,	
2020	\$ 11,074
2021	4,449
2022	1,485
2023	1,485
2024	1,485
Thereafter	9,529
Total	\$ 29,507

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

NOTE 14. OTHER INVESTMENTS

Our *Other investments, net* consisted of the following:

	As of December 31,	
	2019	2018
Other investments, net:		
Equity method investments	\$ 166,209	\$ 182,035
Other equity investments	66,627	81,578
Other debt investments, net	92,569	2,900
Total other investments, net	\$ 325,405	\$ 266,513

Equity Method Investments

Dish Mexico

We own 49% of Dish Mexico, a joint venture that we entered into in 2008 to provide direct-to-home satellite services in Mexico. Historically, we provided certain satellite services to Dish Mexico. However, following the consummation of the BSS Transaction, we no longer provide these services.

Deluxe/EchoStar LLC

We own 50% of Deluxe, a joint venture that we entered into in 2010 to build an advanced digital cinema satellite distribution network targeting delivery to digitally equipped theaters in the U.S. and Canada. We recognized revenue from Deluxe for transponder services and the sale of broadband equipment of \$4.4 million, \$4.4 million and \$4.9 million for the years ended December 31, 2019, 2018 and 2017, respectively. As of December 31, 2019 and 2018, we had trade accounts receivable from Deluxe of \$0.6 million and \$0.8 million, respectively.

Broadband Connectivity Solutions

In August 2018, we entered into an agreement with Yahsat to establish a new entity, BCS, to provide commercial Ka-band satellite broadband services across Africa, the Middle East and southwest Asia operating over Yahsat's Al Yah 2 and Al Yah 3 Ka-band satellites. The transaction was consummated in December 2018 when we invested \$100.0 million in cash in exchange for a 20% interest in BCS. Under the terms of the agreement, we may also acquire, for further cash investments, additional ownership interests in BCS in the future provided certain conditions are met. We supply network operations and management services and equipment to BCS. We recognized revenue from BCS for such services and equipment of \$9.0 million and \$0.7 million for the years ended December 31, 2019 and 2018, respectively. As of December 31, 2019 and 2018, we had \$5.2 million and \$3.4 million, respectively, of trade accounts receivable from BCS.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Summary Financial Information

A summary of financial information for our equity method investees is as follows:

	As of December 31,			
	2019		2018	
	Dish Mexico	All Investees	Dish Mexico	All Investees
Balance sheet data:				
Current assets	\$ 158,481	\$ 346,868	\$ 147,140	\$ 162,593
Non-current assets	260,742	502,931	187,130	188,077
Total assets	<u>\$ 419,223</u>	<u>\$ 849,799</u>	<u>\$ 334,270</u>	<u>\$ 350,670</u>
Current liabilities	\$ 123,159	\$ 147,010	\$ 128,708	\$ 129,837
Non-current liabilities	175,418	176,819	109,643	110,460
Total liabilities	<u>\$ 298,577</u>	<u>\$ 323,829</u>	<u>\$ 238,351</u>	<u>\$ 240,297</u>

	As of December 31,					
	2019		2018		2017	
	Dish Mexico	All Investees	Dish Mexico	All Investees	Dish Mexico	All Investees
Income statement data:						
Revenue	\$ 287,984	\$ 330,535	\$ 444,264	\$ 475,559	\$ 497,096	\$ 535,153
Operating income (loss)	(9,701)	(35,747)	(55,062)	(43,553)	15,094	31,919
Income (loss) before income taxes	(27,479)	(50,410)	(33,449)	(23,701)	18,267	32,739
Net income (loss)	(19,871)	(42,967)	(20,126)	(10,378)	15,658	30,130
Net income (loss) attributable to EchoStar	(11,401)	(14,734)	(10,828)	(5,954)	9,946	16,973

During the fourth quarter ended December 31, 2019, we began recognizing equity in earnings of certain of our equity method investments on a three-month lag so for the year ended December 31, 2019, we have nine months of activity recorded in these Consolidated Financial Statements. The impact of the change was immaterial to these Consolidated Financial Statements.

As of December 31, 2019, our aggregate investment in our equity method investees exceeded our proportionate share of the net assets of the investees by \$23.4 million. This difference is attributable to goodwill recorded at acquisition and certain adjustments related to intra-entity transactions subsequent to acquisition.

We recorded cash distributions from our investments of \$2.7 million, \$10.0 million and \$19.0 million, respectively, for the years ended December 31, 2019, 2018 and 2017. These cash distributions were determined to be a return on investment and reported in *Net cash flows from operating activities* in the Consolidated Statements of Cash Flows. Additionally, we recorded an additional dividend from our investments of \$2.3 million for the year ended December 31, 2019 that was considered a return of investment and reported in *Net cash flows from investing activities* in the Consolidated Statements of Cash Flows. There were no returns of investment during the years ended December 31, 2018 and 2017.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Other Equity Investments

During the year ended December 31, 2019, we recorded a \$36.7 million reduction to the carrying amount of two of our investments based on circumstances that indicated the fair values of the investments were less than their carrying amount. There were no similar reductions for the years ended December 31, 2018 or 2017.

In 2010 and 2011, we made investments in Invidi Technologies Corporation ("Invidi") in exchange for shares of Invidi's Series D Preferred Stock. In November 2016, DIRECTV, LLC, DISH Network and Cavendish Square Holding B.V. entered into a series of agreements to acquire Invidi. As a result, in January 2017, we sold our ownership interest in Invidi on the same terms offered to the other shareholders for \$19.4 million. Our investment had a carrying amount of \$10.5 million and as a result we recognized a gain of \$8.9 million in connection with this transaction for the year ended December 31, 2017.

Other Debt Investments, Net

A summary of our other debt investments without a readily determinable fair value follows:

	As of December 31,	
	2019	2018
Other debt investments, net:		
Cost basis	\$ 102,878	\$ 2,900
Discount	(10,309)	—
Total other debt investments, net	<u>\$ 92,569</u>	<u>\$ 2,900</u>

During the year ended December 31, 2019, we recorded \$2.5 million of interest income related to these debt instruments.

NOTE 15. LONG-TERM DEBT AND FINANCE LEASE OBLIGATIONS

The following table summarizes the carrying amounts and fair values of our long-term debt and finance lease obligations:

	Effective Interest Rate	As of December 31,			
		2019		2018	
		Carrying Amount	Fair Value	Carrying Amount	Fair Value
Senior Secured Notes:					
6 1/2% Senior Secured Notes due 2019	6.959%	\$ —	\$ —	\$ 920,836	\$ 932,696
5 1/4% Senior Secured Notes due 2026	5.320%	750,000	825,308	750,000	695,865
Senior Unsecured Notes:					
7 5/8% Senior Unsecured Notes due 2021	8.062%	900,000	963,783	900,000	934,902
6 5/8% Senior Unsecured Notes due 2026	6.688%	750,000	833,903	750,000	696,353
Less: Unamortized debt issuance costs		(10,832)	—	(16,757)	—
Subtotal		2,389,168	<u>\$ 2,622,994</u>	3,304,079	<u>\$ 3,259,816</u>
Finance lease obligations		1,051		1,705	
Total debt and finance lease obligations		2,390,219		3,305,784	
Less: Current portion		(486)		(919,582)	
Long-term debt and finance lease obligations, net of current portion		<u>\$ 2,389,733</u>		<u>\$ 2,386,202</u>	

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

2019 Senior Secured Notes and 2021 Senior Unsecured Notes

On June 1, 2011, HSS issued \$1.1 billion aggregate principal amount of 6 1/2% Senior Secured Notes due 2019 (the "2019 Senior Secured Notes") at an issue price of 100.0%, pursuant to a Secured Indenture dated June 1, 2011. During the years ended December 31, 2019 and 2018, we repurchased \$11.5 million and \$69.2 million, respectively, of the 2019 Senior Secured Notes in the open market and recorded losses on the repurchase of \$0.1 million and \$1.0 million, respectively. The 2019 Senior Secured Notes matured on June 15, 2019.

On June 1, 2011, HSS also issued \$900.0 million aggregate principal amount of 7 5/8% Senior Unsecured Notes due 2021 (the "2021 Senior Unsecured Notes,") at an issue price of 100.0%, pursuant to an Unsecured Indenture dated June 1, 2011 (the "2011 Indenture"). The 2021 Senior Unsecured Notes mature on June 15, 2021. Interest accrues at an annual rate of 7 5/8% and is payable semi-annually in cash, in arrears on June 15 and December 15 of each year.

2026 Senior Secured Notes and 2026 Senior Unsecured Notes

On July 27, 2016, HSS issued \$750.0 million aggregate principal amount of 5 1/4% Senior Secured Notes due 2026 (the "2026 Senior Secured Notes") at an issue price of 100.0%, pursuant to an indenture dated July 27, 2016 (the "2016 Secured Indenture") and \$750.0 million aggregate principal amount of 6 5/8% Senior Unsecured Notes due 2026 (the "2026 Senior Unsecured Notes" and, together with the 2021 Senior Unsecured Notes, the "Unsecured Notes") at an issue price of 100.0%, pursuant to an indenture dated July 27, 2016 (together with the 2011 Indenture and the 2016 Secured Indenture, the "Indentures"). The 2021 Senior Unsecured Notes, the 2026 Senior Secured Notes and the 2026 Senior Unsecured Notes are referred to collectively as the "Notes" and individually as a series of the Notes. The 2026 Senior Secured Notes and the 2026 Senior Unsecured Notes (collectively, the "2026 Notes") mature on August 1, 2026. Interest on the 2026 Senior Secured Notes accrue at an annual rate of 5 1/4% and interest on the 2026 Senior Unsecured Notes accrues at an annual rate of 6 5/8%. Interest on the 2026 Senior Secured Notes is payable semi-annually in cash, in arrears, on February 1 and August 1 of each year.

Additional Information Relating to the Notes

Each series of the Notes is redeemable, in whole or in part, at any time at a redemption price equal to 100.0% of the principal amount thereof plus a "make-whole" premium, as defined in the applicable Indenture, together with accrued and unpaid interest, if any, to the date of redemption. HSS may also redeem up to 10.0% of the outstanding 2026 Senior Notes per year prior to August 1, 2020 at a redemption price equal to 103.0% of the principal amount thereof plus accrued and unpaid interest as of the date of redemption.

The 2026 Senior Secured Notes are:

- secured obligations of HSS;
- secured by security interests in substantially all existing and future tangible and intangible assets of HSS and certain of its subsidiaries on a first priority basis, subject to certain exceptions;
- effectively junior to HSS' obligations that are secured by assets that are not part of the collateral that secures the 2026 Senior Secured Notes, in each case, to the extent of the value of the collateral securing such obligations;
- effectively senior to HSS' existing and future unsecured obligations to the extent of the value of the collateral securing the 2026 Senior Secured Notes, after giving effect to permitted liens as provided in the 2016 Secured Indenture;
- senior in right of payment to all existing and future obligations of HSS that are expressly subordinated to the 2026 Senior Secured Notes;
- structurally junior to any existing and future obligations of any of HSS' subsidiaries that do not guarantee the 2026 Senior Secured Notes; and
- unconditionally guaranteed, jointly and severally, on a general senior secured basis by certain of our HSS' subsidiaries, which guarantees rank equally with all of the guarantors' existing and future unsubordinated indebtedness and effectively senior to such guarantors' existing and future obligations to the extent of the value of the assets securing the 2026 Senior Secured Notes.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

The Unsecured Notes are:

- unsecured senior obligations of HSS;
- ranked equally with all existing and future unsubordinated indebtedness (including as between the 2021 Senior Unsecured Notes and the 2026 Senior Unsecured Notes) and effectively junior to any secured indebtedness up to the value of the assets securing such indebtedness;
- effectively junior to HSS' obligations that are secured to the extent of the value of the collateral securing such obligations;
- senior in right of payment to all existing and future obligations of HSS that are expressly subordinated to the respective Unsecured Notes;
- structurally junior to any existing and future obligations of any of HSS' subsidiaries that do not guarantee the respective Unsecured Notes; and
- unconditionally guaranteed, jointly and severally, on a general senior secured basis by certain of HSS' subsidiaries, which guarantees rank equally with all of the guarantors' existing and future unsubordinated indebtedness, and effectively junior to any secured indebtedness of the guarantors up to the value of the assets securing such indebtedness.

Subject to certain exceptions, the Indentures contain restrictive covenants that, among other things, impose limitations on HSS' ability and, in certain instances, the ability of certain of HSS' subsidiaries to:

- incur additional debt;
- pay dividends or make distributions on HSS' or their capital stock or repurchase HSS' or their capital stock;
- make certain investments;
- create liens or enter into sale and leaseback transactions;
- enter into transactions with affiliates;
- merge or consolidate with another company;
- transfer and sell assets; and
- allow to exist certain restrictions on its or their ability to pay dividends, make distributions, make other payments, or transfer assets.

In the event of a Change of Control, as defined in the respective Indentures, HSS would be required to make an offer to repurchase all or any part of a holder's Notes at a purchase price equal to 101.0% of the aggregate principal amount thereof, together with accrued and unpaid interest to the date of repurchase.

The Indentures provide for customary events of default for each series of the Notes, including, among other things, non-payment, breach of the covenants in the applicable Indentures, payment defaults or acceleration of other indebtedness, a failure to pay certain judgments and certain events of bankruptcy, insolvency and reorganization. If any event of default occurs and is continuing with respect to any series of the Notes, the trustee or the holders of at least 25.0% in principal amount of the then outstanding Notes of such series may declare all the Notes of such series to be due and payable immediately, together with any accrued and unpaid interest.

Debt Issuance Costs

For the years ended December 31, 2019, 2018 and 2017, we amortized \$5.9 million, \$7.9 million and \$7.4 million, respectively, of debt issuance costs incurred for all debt issuances, which are included in *Interest expense, net of amounts capitalized* in the Consolidated Statements of Operations.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

NOTE 16. INCOME TAXES

The components of *Income (loss) from continuing operations before income taxes* in the Consolidated Statements of Operations are as follows:

	For the years ended December 31,		
	2019	2018	2017
Domestic	\$ 120,295	\$ 33,176	\$ 14,488
Foreign	(213,460)	(158,962)	(46,688)
Income (loss) from continuing operations before income taxes	<u>\$ (93,165)</u>	<u>\$ (125,786)</u>	<u>\$ (32,200)</u>

The components of *Income tax benefit (provision), net*, in the Consolidated Statements of Operations are as follows:

	For the years ended December 31,		
	2019	2018	2017
Current benefit (provision), net:			
Federal	\$ (5,089)	\$ (1,476)	\$ (1,429)
State	286	4,881	267
Foreign	(633)	(2,690)	(2,335)
Total current benefit (provision), net	<u>\$ (5,436)</u>	<u>\$ 715</u>	<u>\$ (3,497)</u>
Deferred benefit (provision), net:			
Federal	\$ (7,511)	\$ 6,857	\$ 168,625
State	(10,964)	(14,375)	(4,482)
Foreign	3,423	227	(5,539)
Total deferred benefit (provision), net	<u>(15,052)</u>	<u>(7,291)</u>	<u>158,604</u>
Total income tax benefit (provision), net	<u>\$ (20,488)</u>	<u>\$ (6,576)</u>	<u>\$ 155,107</u>

Our actual tax provisions reconcile to the amounts computed by applying the statutory federal tax rate to *Income (loss) from continuing operations before income taxes* in the Consolidated Statements of Operations as follows:

	For the years ended December 31,		
	2019	2018	2017
Statutory rate	\$ 19,565	\$ 26,415	\$ 11,270
State income taxes, net of federal provision (benefit)	(8,137)	(10,519)	(3,165)
Permanent differences	(6,531)	(1,367)	1,154
Tax credits	12,453	7,825	5,622
Valuation allowance	(54,251)	(50,118)	(4,642)
Enactment of Tax Cuts and Job Act of 2017	—	—	144,945
Rates different than statutory	18,786	20,254	77
Other	(2,373)	934	(154)
Total income tax benefit (provision), net	<u>\$ (20,488)</u>	<u>\$ (6,576)</u>	<u>\$ 155,107</u>

ECHOSTAR CORPORATION
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The components of our deferred tax assets and liabilities are as follows:

	As of December 31,	
	2019	2018
Deferred tax assets:		
Net operating losses, credit and other carryforwards	\$ 289,353	\$ 284,300
Unrealized losses on investments, net	39,018	41,852
Accrued expenses	19,660	22,125
Stock-based compensation	5,772	10,210
Other assets	28,163	22,366
Total deferred tax assets	381,966	380,853
Valuation allowance	(181,032)	(109,762)
Deferred tax assets after valuation allowance	\$ 200,934	\$ 271,091
Deferred tax liabilities:		
Depreciation and amortization	\$ (544,158)	\$ (553,480)
Other liabilities	(1,217)	(1,290)
Total deferred tax liabilities	(545,375)	(554,770)
Total net deferred tax liabilities	\$ (344,441)	\$ (283,679)
Net deferred tax asset foreign jurisdiction	\$ 7,251	\$ 4,310
Net deferred tax liability domestic	(351,692)	(287,989)
Total net deferred tax liabilities	\$ (344,441)	\$ (283,679)

Overall, our net deferred tax assets were offset by a valuation allowance of \$181.0 million and \$109.8 million as of December 31, 2019 and 2018, respectively. The change in the valuation allowance primarily relates to an increase in the net operating loss carryforwards of certain foreign subsidiaries and a decrease associated with unrealized gains that are capital in nature.

Tax benefits of net operating loss and tax credit carryforwards are evaluated on an ongoing basis, including a review of historical and projected future operating results, the eligible carryforward period, and other circumstances. As of December 31, 2019, we had net operating loss carryforwards of \$746.6 million, including \$351.5 million of foreign net operating loss carryforwards. A substantial portion of these net operating loss carryforwards will begin to expire in 2032. As of December 31, 2019, we have tax credit carryforwards of \$143.0 million and \$101.3 million for federal and state income tax purposes, respectively. If not utilized, the federal tax credit carryforwards will begin to expire in 2024 and the state tax credit carryforwards begin to expire in 2019.

As of December 31, 2019, we had undistributed earnings attributable to foreign subsidiaries for which no provision for U.S. income taxes or foreign withholding taxes has been made because it is expected that such earnings will be reinvested outside the U.S. indefinitely. It is not practicable to determine the amount of the unrecognized deferred tax liability at this time. However, due to the one-time transition tax on the deemed repatriation of post-1986 undistributed foreign subsidiary earnings, the majority of previously unremitted earnings have now been subjected to U.S. federal income tax. As of December 31, 2019 and 2018, we had net deferred tax assets related to our foreign subsidiaries of \$7.3 million and \$4.3 million, respectively, which were recorded in *Other non-current assets, net* in the Consolidated Balance Sheets.

Accounting for the U.S. Tax Cuts and Jobs Act

The Tax Cuts and Jobs Act of 2017 (the "2017 Tax Act") was enacted in December 2017 and has significantly impacted our effective tax rate and the tax benefit calculated for the year ended December 31, 2017. For the year ended

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

December 31, 2017, we recorded a benefit of \$144.9 million to reflect the change in the value of our deferred tax assets and liabilities resulting from the change in the federal corporate tax rate from 35% to 21%. For the year ended December 31, 2018, we recorded an additional tax benefit of \$0.8 million and did not record any valuation allowances on foreign tax credit carryforwards. We account for the effects, if any, of the global intangible low-taxed income provisions ("GILTI") of the 2017 Tax Act as incurred. We did not record a tax provision related to the tax on deemed mandatory repatriation of our unrepatriated foreign earnings for the year ended December 31, 2017. As a result of the release of new treasury regulations in June 2019, we have recorded additional tax expense of \$1.5 million on deemed mandatory repatriation of certain deferred foreign earnings.

Accounting for Uncertainty in Income Taxes

In addition to filing U.S. federal income tax returns, we file income tax returns in all states that impose an income tax. As of December 31, 2019, we are not currently under a U.S. federal income tax examination. However, the IRS could perform tax examinations on years as early as tax year 2008. We are also subject to frequent state income tax audits and have open state examinations on years as early as 2008. We also file income tax returns in the United Kingdom, Brazil, India and a number of other foreign jurisdictions. We generally are open to income tax examination in these foreign jurisdictions for taxable years beginning in 2003. As of December 31, 2019, we are currently being audited by the Indian tax authorities for fiscal years 2003 through 2012. We have no other on-going significant income tax examinations in process in our foreign jurisdictions.

The reconciliation of the beginning and ending amount of unrecognized income tax benefits is as follows:

	For the years ended December 31,		
	2019	2018	2017
Unrecognized tax benefit balance as of beginning of period:	\$ 69,540	\$ 63,296	\$ 63,502
Additions based on tax positions related to the current year	861	4,361	1,116
Additions based on tax positions related to prior years	—	2,539	258
Reductions based on tax positions related to prior years	—	(656)	(852)
Reductions based on expirations of statute of limitations	—	—	(728)
Balance as of end of period	<u>\$ 70,401</u>	<u>\$ 69,540</u>	<u>\$ 63,296</u>

As of December 31, 2019 and 2018, we had \$70.4 million and \$69.5 million, respectively, of unrecognized income tax benefits, all of which, if recognized, would affect our effective tax rate. We do not believe that the total amount of unrecognized income tax benefits will significantly increase or decrease within the next twelve months due to the lapse of statute of limitations or settlement with tax authorities.

For the years ended December 31, 2019, 2018 and 2017, our income tax provision included an insignificant amount of interest and penalties.

NOTE 17. STOCKHOLDERS' EQUITY

Preferred Stock

Our board of directors is authorized to issue preferred stock and may divide such preferred stock into series and, with respect to each series, to determine the preferences and rights and the qualifications, limitations or restrictions of the series, including the dividend rights, conversion rights, voting rights, redemption rights and terms, liquidation preferences, sinking fund provisions, the number of shares constituting the series and the designation of such series. Our board of directors may, without stockholder approval, issue additional preferred stock of existing or new series with voting and other rights that could adversely affect the voting power of the holders of common stock and could have certain anti-takeover effects.

In February 2014, our board of directors authorized 13,000,000 shares of Tracking Stock with a par value of \$0.001 per share, of which 6,290,499 shares were issued to DISH Network on March 1, 2014. Following the consummation

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of the Share Exchange, we no longer operate our former EchoStar Technologies businesses, the Tracking Stock was retired and is no longer outstanding, and all agreements, arrangements and policy statements with respect to the Tracking Stock terminated. See *Note 5. Discontinued Operations* and *Note 23. Related Party Transactions* for additional information about the Share Exchange.

Common Stock

Our Class A, Class B, and Class C common stock are equivalent except for voting rights. Holders of Class A and Class C common stock are entitled to one vote per share and holders of Class B common stock are entitled to 10 votes per share. Upon a change in control of the Company, each holder of outstanding shares of Class C common stock is entitled to 10 votes for each share of Class C common stock held. 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. Charles W. Ergen, our Chairman, and certain entities established for the benefit of his family beneficially own all outstanding Class B common stock. There are no shares of Class C common stock outstanding.

Any holder of Class D common stock is not entitled to a vote on any matter or to convert the shares of Class D common stock into any other class of common stock. There are no shares of Class D common stock outstanding.

Each share of common stock is entitled to receive its pro rata share, based upon the number of shares of common stock held, of dividends and distributions upon liquidation.

Common Stock Repurchase Program

Pursuant to stock repurchase programs approved by our board of directors, we were authorized to repurchase up to \$500.0 million of our outstanding shares of Class A common stock through and including December 31, 2020. For the year ended December 31, 2018, we repurchased 952,603 shares of our common stock at an average price per share of \$34.95 for a total purchase price of \$33.3 million. For the years ended December 31, 2019 and 2017, we did not repurchase any common stock under this program.

NOTE 18. EMPLOYEE BENEFIT PLANS

Employee Stock Purchase Plan

We have an employee stock purchase plan (the "ESPP"), under which we are authorized to issue 5.0 million shares of Class A common stock. As of December 31, 2019, we had approximately 2.2 million shares of Class A common stock which remain available for issuance under the ESPP. Generally, all full-time employees who have been employed by EchoStar 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, each employee's deductions are limited so that the maximum they may purchase under the ESPP is \$25,000 in fair value of Class A common stock per year. Stock purchases are made on the last business day of each calendar quarter at 85.0% of the closing price of the Class A common stock on that date. For the years ended December 31, 2019, 2018 and 2017, employee purchases of Class A common stock through the ESPP totaled approximately 285,000 shares, 245,000 shares and 176,000 shares, respectively.

401(k) Employee Savings Plans

Under the EchoStar 401(k) Plan ("the Plan"), eligible employees are entitled to contribute up to 75.0% of their eligible compensation, on a pre-tax and/or after-tax basis, subject to the maximum contribution limit provided by the Internal Revenue Code of 1986, as amended (the "Code"). All employee contributions to the Plan are immediately vested. We match 50 cents on the dollar for the first 6.0% of each employee's salary contributions to the Plan for a total of 3.0% match on a pre-tax basis up to a maximum of \$7,500 annually. Our match is calculated each pay period there is an employee contribution. In addition, we may make an annual discretionary contribution to the Plan to be made in cash or our stock. Our contributions under the Plan vest at 20.0% per year and are 100.0% vested after an eligible employee has completed five years of employment. Forfeitures of unvested participant balances may be used to fund matching and discretionary contributions.

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During the years ended December 31, 2019, 2018 and 2017, we recognized matching contributions, net of forfeitures, of \$5.1 million, \$5.0 million and \$5.1 million, respectively, and made discretionary contributions of shares of our Class A common stock, net of forfeitures, with a fair value of \$6.7 million, \$7.6 million and \$11.2 million, respectively (approximately 181,000, 127,000 and 218,000 shares, respectively), to the Plan.

NOTE 19. STOCK-BASED COMPENSATION

Stock Incentive Plans

We maintain stock incentive plans to attract and retain officers, directors, employees, consultants and advisors. Stock awards under these plans may include both performance-based and non-performance based stock incentives. As of December 31, 2019, we had outstanding stock options to acquire approximately 4.8 million shares of our Class A common stock under these plans. Stock options granted prior to December 31, 2019 were granted with exercise prices equal to or greater than the market value of our Class A common stock at the date of grant or the last trading day prior to the date of grant (if the grant date is not a trading day) and generally with a maximum term of ten years for our officers and employees and five years for our non-employee directors. While we generally issue stock awards subject to vesting, typically over five years, some stock awards have been granted with immediate or longer vesting periods or that vest only upon the achievement of certain performance objectives. Under these plans, we grant to certain of our employees awards of fully vested shares of Class A common stock under our Employee Innovator Recognition Program, which is available to all of our eligible employees. As of December 31, 2019, we had approximately 6.4 million shares of our Class A common stock available for future grant under our stock incentive plans.

In connection with the BSS Transaction, we adjusted stock options that were unexercised and outstanding as of the date of the Distribution, which resulted in an increase in the number of such options and a reduction in the exercise price of such options.

Exercise prices for stock options outstanding and exercisable as of December 31, 2019 are as follows:

Exercise Price Range	Options Outstanding			Options Exercisable		
	Number Outstanding as of December 31, 2019	Weighted-Average Remaining Contractual Term (In Years)	Weighted-Average Exercise Price	Number Exercisable as of December 31, 2019	Weighted-Average Remaining Contractual Term (In Years)	Weighted-Average Exercise Price
\$0.00 - \$20.00	62,662	1	\$ 17.15	62,662	1	\$ 17.15
\$20.01 - \$25.00	3,221	3	22.96	3,221	3	22.96
\$25.01 - \$30.00	405,635	3	29.74	405,635	3	29.74
\$30.01 - \$35.00	681,044	5	33.03	411,674	3	33.09
\$35.01 - \$40.00	1,608,113	9	38.77	196,175	6	38.32
\$40.01 - \$45.00	1,062,153	5	42.16	1,012,766	5	42.03
\$45.01 - \$50.00	926,539	7	48.41	384,305	7	48.36
\$50.01 - \$55.00	63,277	6	52.69	34,509	5	57.73
	<u>4,812,644</u>	<u>7</u>	<u>43.40</u>	<u>2,510,947</u>	<u>5</u>	<u>38.76</u>

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Stock Award Activity

Our stock option activity was as follows:

	For the years ended December 31,					
	2019		2018		2017	
	Options	Weighted-Average Exercise Price	Options	Weighted-Average Exercise Price	Options	Weighted-Average Exercise Price
Total options outstanding, beginning of period	5,013,038	\$ 41.80	4,951,256	\$ 41.42	5,968,763	\$ 39.30
Granted	1,959,597	38.12	215,500	51.71	1,262,500	57.12
Exercised	(1,986,937)	33.89	(108,318)	40.67	(1,018,507)	35.84
Forfeited and canceled	(173,054)	48.99	(45,400)	50.21	(1,261,500)	51.63
Total options outstanding, end of period	<u>4,812,644</u>	43.40	<u>5,013,038</u>	41.80	<u>4,951,256</u>	41.42
Exercisable at end of period	2,510,947	38.76	3,710,138	38.59	3,143,656	36.98

On April 1, 2017, we granted to Mr. Ergen, our Chairman, an option to purchase 1,100,000 shares of Class A common stock. On April 24, 2017, Mr. Ergen voluntarily forfeited a portion of the option covering 600,000 shares and we canceled such forfeited portion of the option.

We realized total tax benefits from stock options exercised of \$6.9 million, \$0.4 million and \$3.1 million for the years ended December 31, 2019, 2018 and 2017, respectively. The aggregate intrinsic value of our stock options exercised was \$17.1 million, \$1.8 million and \$19.8 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Stock-Based Compensation

Total non-cash, stock-based compensation expense is shown in the following table:

	For the years ended December 31,		
	2019	2018	2017
Stock-based compensation expense:			
Research and development expenses	\$ 465	\$ 634	\$ 1,010
Selling, general and administrative expenses	8,860	9,442	10,579
Total stock-based compensation expense	<u>\$ 9,325</u>	<u>\$ 10,076</u>	<u>\$ 11,589</u>

The income tax benefits related to stock-based compensation expense was \$1.9 million, \$2.0 million and \$3.9 million for the years ended December 31, 2019, 2018 and 2017, respectively. As of December 31, 2019, total unrecognized stock-based compensation cost, net of estimated forfeitures, related to our unvested stock awards was \$21.4 million. This amount is based on an estimated future forfeiture rate of 2.0% per year and will be recognized over a weighted-average period of approximately two years.

Upon adoption of new accounting guidance (ASU No. 2016-09) effective January 1, 2017, all excess tax benefits and deficiencies were required to be recognized as income tax expense or benefit. As a result, upon adoption on January 1, 2017, we recorded a \$14.5 million deferred tax asset and a corresponding credit to *Accumulated earnings (losses)* in the Consolidated Balance Sheets for excess tax benefits that had not previously been recognized because the related tax deductions had not reduced taxes payable and made an entity-wide policy election to continue to estimate forfeitures as they occur.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Valuation of Stock Options

The fair value of each stock option granted for the years ended December 31, 2019, 2018 and 2017 was estimated at the date of the grant using a Black-Scholes option valuation model. The estimated grant-date fair values and related assumptions were as follows:

	For the years ended December 31,		
	2019	2018	2017
Assumptions:			
Risk-free interest rate	1.83% - 2.54%	2.25% - 2.99%	1.98% - 2.05%
Volatility	23.58% - 30.95%	22.77% - 23.28%	24.20% - 26.69%
Expected term of options (in years)	5.7 - 5.8	5.7 - 5.8	5.7 - 5.8
Weighted-average grant-date fair value	\$10.22 - \$14.49	\$12.38 - \$16.23	\$15.25 - \$16.49

We do not currently intend to pay dividends on our common stock and accordingly, the dividend yield used in the Black-Scholes option valuation model was assumed to be 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 that determined using other valuation models. Further, the Black-Scholes option valuation model requires the input of subjective assumptions. Changes in the subjective input assumptions can materially affect the fair value estimate.

Based on the closing market price of our Class A common stock on December 31, 2019, the aggregate intrinsic value of our stock options was \$23.1 million for options outstanding and \$14.0 million for options exercisable as of December 31, 2019.

NOTE 20. COMMITMENTS AND CONTINGENCIES

Commitments

The following table summarizes our contractual obligations from our continuing operations as of December 31, 2019:

	Payments Due in the Year Ending December 31,						
	Total	2020	2021	2022	2023	2024	Thereafter
Long-term debt	\$ 2,400,000	\$ —	\$ 900,000	\$ —	\$ —	\$ —	\$ 1,500,000
Finance lease obligations	1,212	629	487	96	—	—	—
Interest on long-term debt	726,377	157,688	123,375	89,063	89,063	89,063	178,125
Satellite-related obligations	419,033	192,869	31,036	18,479	18,004	17,620	141,025
Operating lease obligations	152,722	20,884	17,648	15,384	14,373	13,286	71,147
Total	<u>\$ 3,699,344</u>	<u>\$ 372,070</u>	<u>\$ 1,072,546</u>	<u>\$ 123,022</u>	<u>\$ 121,440</u>	<u>\$ 119,969</u>	<u>\$ 1,890,297</u>

The table above does not include amounts related to deferred tax liabilities, unrecognized tax positions and certain other amounts recorded in our non-current liabilities as the timing of any payments is uncertain. The table also excludes long-term deferred revenue and other long-term liabilities that do not require future cash payments. Additionally, our satellite-related obligations primarily include payments pursuant to agreements for the construction of the EchoStar XXIV satellite, payments pursuant to regulatory authorizations, non-lease costs associated with our finance lease satellites, in-orbit incentives relating to certain satellites and commitments for satellite service arrangements. We incurred satellite-related expenses of \$53.2 million, \$74.8 million and \$91.6 million for the years ended December 31, 2019, 2018 and 2017, respectively.

In certain circumstances, the dates on which we are obligated to pay our contractual obligations could change.

Contingencies

Patents and Intellectual Property

Many entities, including some of our competitors, have, or may have in the future, patents and other intellectual property rights that cover or affect products or services directly or indirectly related to those that we offer. We may not be aware of all patents and other intellectual property rights that our products and services may potentially infringe. Damages in patent infringement cases can be substantial, and in certain circumstances can be tripled. Further, we cannot estimate the extent to which we may be required in the future to obtain licenses with respect to intellectual property rights 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 our products and services. We cannot be certain that these parties do not own the rights they claim, that these rights are not valid or that our products and services do not infringe on these rights. Further, we cannot be certain that we would be able to obtain licenses from these parties on commercially reasonable terms or, if we were unable to obtain such licenses, that we would be able to redesign our products and services to avoid infringement.

Separation Agreement, Share Exchange and BSS Transaction

In connection with the Spin-off, we entered into a separation agreement with DISH Network that provides, among other things, for the division of certain liabilities, including liabilities resulting from litigation. Under the terms of the separation agreement, we assumed certain liabilities that relate to our 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 we will generally only be liable for our acts or omissions following the Spin-off and DISH Network will indemnify us for any liabilities or damages resulting from intellectual property claims relating to the period prior to the Spin-off as well as DISH Network's acts or omissions following the Spin-off. Additionally, in connection with the Share Exchange and BSS Transaction, we entered into the Share Exchange Agreement and the Master Transaction Agreement, respectively, and other agreements which provide, among other things, for the division of certain liabilities, including liabilities relating to taxes, intellectual property and employees and liabilities resulting from litigation and the assumption of certain liabilities that relate to the transferred businesses and assets. These agreements also contain additional indemnification provisions between us and DISH Network for, in the case of the Share Exchange, certain pre-existing liabilities and legal proceedings and, in the case of the BSS Transaction, certain losses with respect to breaches of certain representations and covenants and certain liabilities.

Litigation

We are involved in a number of legal proceedings concerning matters arising in connection with the conduct of our business activities. Many of these proceedings are at preliminary stages and/or 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 and to determine if accruals are appropriate. We record an accrual for litigation and other loss contingencies when we determine that a loss is probable and the amount of the loss can be reasonably estimated. If accruals are not appropriate, we further evaluate each legal proceeding to assess whether an estimate of possible loss or range of loss can be made. There can be no assurance that legal proceedings against us will be resolved in amounts that will not differ from the amounts of our recorded accruals. Legal fees and other costs of defending legal proceedings are charged to expense as incurred.

For certain proceedings, management is unable to predict with any degree of certainty the outcome or 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 or specified; (iii) damages are unsupported, indeterminate and/or exaggerated in management's opinion; (iv) there is uncertainty as to the outcome of pending trials, appeals, motions or other proceedings; (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 are involved (as with many patent-related cases). Except as described below, however, management does not believe, based on currently available information, that the outcomes of these proceedings will have a material effect on our financial condition, operating results or cash flows, though there is no assurance that the resolution and outcomes of these proceedings, individually or in the aggregate, will not be material to our financial condition, operating results or cash flows for any particular period, depending, in part, upon the operating results for such period.

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We intend to vigorously defend the proceedings against us. In the event that a court, tribunal, other body or jury ultimately rules against us, we may be subject to adverse consequences, including, without limitation, substantial damages, which may include treble damages, fines, penalties, compensatory damages and/or other equitable or injunctive relief that could require us to materially modify our business operations or certain products or services that we offer to our consumers.

Elbit. On January 23, 2015, Elbit Systems Land and C4I LTD and Elbit Systems of America Ltd. (together referred to as "Elbit") filed a complaint against our subsidiary Hughes Network Systems, L.L.C. ("HNS"), as well as against Black Elk Energy Offshore Operations, LLC, Bluetide Communications, Inc. and Helm Hotels Group, in the U.S. District Court for the Eastern District of Texas, alleging infringement of U.S. Patent Nos. 6,240,073 (the "073 patent") and 7,245,874 ("874 patent"). The 073 patent is entitled "Reverse Link for a Satellite Communication Network" and the 874 patent is entitled "Infrastructure for Telephony Network." Elbit alleges that the 073 patent is infringed by broadband satellite systems that practice the Internet Protocol Over Satellite standard. Elbit alleges that the 874 patent is infringed by the manufacture and sale of broadband satellite systems that provide cellular backhaul service via connections to E1 or T1 interlaces at cellular backhaul base stations. On April 2, 2015, Elbit filed an amended complaint removing Helm Hotels Group as a defendant, but making similar allegations against a new defendant, Country Home Investments, Inc.

On November 3 and 4, 2015 and January 22, 2016, the defendants filed petitions before the United States Patent and Trademark Office ("USPTO") challenging the validity of the patents in suit, which the USPTO subsequently declined to institute. On April 13, 2016, the defendants answered Elbit's complaint. At Elbit's request, on June 26, 2017, the court dismissed Elbit's claims of infringement against all parties other than HNS. Trial commenced on July 31, 2017. On August 7, 2017, the jury returned a verdict that the 073 patent was valid and infringed, and awarded Elbit \$21.1 million. The jury also found that such infringement of the 073 patent was not willful and that the 874 patent was not infringed. On March 30, 2018, the court ruled on post-trial motions, upholding the jury's findings and awarding Elbit attorneys' fees in an amount that has not yet been specified. Elbit initially requested an award of \$13.9 million of attorneys' fees. On April 27, 2018, HNS filed a notice of appeal to the U.S. Court of Appeals for the Federal Circuit. Oral argument was held on May 8, 2019. On June 25, 2019, the Federal Circuit issued an Opinion and Order affirming the court's judgment and holding that it did not yet have jurisdiction to review the court's decision to award attorney's fees. On August 8, 2019, HNS filed a combined petition for panel rehearing or rehearing en banc with the Federal Circuit, which was denied on September 10, 2019. In an order dated September 18, 2019, the District Court questioned the attorneys' fees calculations proposed by both parties and asked for further briefing, which the parties submitted on October 25, 2019. As a result of the Federal Circuit's rulings, as of September 30, 2019, we recorded an accrual of \$33.7 million. In December 2019, we entered into a comprehensive settlement agreement with Elbit pursuant to which we paid a total of \$33.0 million in satisfaction of all amounts relating to these matters and all open proceedings, including appeals, were dismissed with prejudice.

Shareholder Litigation. On July 2, 2019, the City of Hallandale Beach Police Officers' and Firefighters' Personnel Retirement Trust, purporting to sue on behalf of a class of EchoStar Corporation's stockholders, filed a complaint in the District Court of Clark County, Nevada against our directors, Charles W. Ergen, R. Stanton Dodge, Anthony M. Federico, Pradman P. Kaul, C. Michael Schroeder, Jeffrey R. Tarr, William D. Wade, and Michael T. Dugan; our officer, David J. Rayner; EchoStar Corporation; HSS; our former subsidiary BSS Corp.; and DISH and its subsidiary Merger Sub. On September 5, 2019, the defendants filed motions to dismiss. On October 11, 2019, the plaintiffs filed an amended complaint removing Messrs. Dodge, Federico, Kaul, Schroeder, Tarr and Wade as defendants. The amended complaint alleges that Mr. Ergen, as our controlling stockholder, breached fiduciary duties to EchoStar Corporation's minority stockholders by structuring the BSS Transaction with inadequate consideration and improperly influencing our and HSS' boards of directors to approve the BSS Transaction. The amended complaint also alleges that the other defendants aided and abetted such alleged breaches. The plaintiffs seek equitable and monetary relief, including the issuance of additional DISH Common Stock, and other costs and disbursements, including attorneys' fees on behalf of the purported class. On November 11, 2019, we and the other defendants filed separate motions to dismiss plaintiff's amended complaint and during a hearing on January 13, 2020 the court denied these motions. On February 10, 2020, we and the other defendants filed answers to the amended complaint. We intend to vigorously defend this case. We cannot predict its outcome with any degree of certainty.

License Fee Dispute with Government of India, Department of Telecommunications. In 1994, the Government of India promulgated a "National Telecommunications Policy" under which the government liberalized the

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telecommunications sector and required telecommunications service providers to pay fixed license fees. Pursuant to this policy, our subsidiary Hughes Communications India Private Limited ("HCIPL"), formerly known as Hughes Escorts Communications Limited, obtained a license to operate a data network over satellite using VSAT systems. In 1999, HCIPL's license was amended pursuant to a new government policy that eliminated the fixed license fees and instead required each telecommunications service provider to pay license fees based on its adjusted gross revenue ("AGR"). In March 2005, the Indian Department of Telecommunications ("DOT") notified HCIPL that, based on its review of HCIPL's audited accounts and AGR statements, HCIPL must pay additional license fees, interest on such fees and penalties and interest on the penalties. HCIPL responded that the DOT had improperly calculated its AGR by including revenue from licensed and unlicensed activities. The DOT rejected this explanation and in 2006, HCIPL filed a petition with an administrative tribunal (the "Tribunal"), challenging the DOT's calculation of its AGR. The DOT also issued license fee assessments to other telecommunications service providers and a number of similar petitions were filed by several other such providers with the Tribunal. These petitions were amended, consolidated, remanded and re-appealed several times. On April 23, 2015, the Tribunal issued a judgment affirming the DOT's calculation of AGR for the telecommunications service providers but reversing the DOT's imposition of interest, penalties and interest on such penalties as excessive. Over subsequent years, the DOT and HCIPL and other telecommunications service providers, respectively, filed several appeals of the Tribunal's ruling. On October 24, 2019, the Supreme Court of India ("Supreme Court") issued an order (the "Order") affirming the license fee assessments imposed by the DOT, including its imposition of interest, penalties and interest on the penalties, but without indicating the amount HCIPL is required to pay the DOT, and ordering payment by January 23, 2020. On November 23, 2019, we and other telecommunication service providers filed a petition asking the Supreme Court to reconsider its decision. The petition was denied on January 20, 2020. On January 22, 2020, we and other telecommunication service providers filed an application requesting that the Supreme Court modify the Order to permit the DOT to calculate the final amount due and extend HCIPL's and the other telecommunication service providers' payment deadline. On February 14, 2020, the Supreme Court denied this application and directed us and the other telecommunication service providers to explain why the Supreme Court should not initiate contempt proceedings for failure to pay the amounts due. The Supreme Court further ordered the parties to appear on March 17, 2020. To date, the DOT has issued HCIPL written assessments totaling \$28.4 million, comprised of \$4.0 million for additional license fees, \$4.1 million for penalties and \$20.3 million for interest and interest on penalties. It is possible that the DOT's assessments may be modified depending on the methodology it uses to calculate interest over the period in question. As a result of the Order and the Supreme Court's February 14th decision and using the DOT's current methodology as reflected in the assessments we have received, we have recorded an accrual of \$80.2 million as of December 31, 2019, comprised of \$4.0 million for additional license fees, \$4.1 million for penalties and \$72.1 million for interest and interest on penalties. We had recorded an accrual of \$1.3 million as of December 31, 2018. Any eventual payments made with respect to the ultimate outcome of this matter may be different from our accrual and such differences could be significant.

Other. In addition to the above actions, we are subject to various other legal proceedings and claims, which arise in the ordinary course of business. As part of our ongoing operations, we are subject to various inspections, audits, inquiries, investigations and similar actions by third parties, as well as by governmental/regulatory authorities responsible for enforcing the laws and regulations to which we may be subject. Further, under the federal False Claims Act, private parties have the right to bring qui tam, or "whistleblower," suits against companies that submit false claims for payments to, or improperly retain overpayments from, the federal government. Some states have adopted similar state whistleblower and false claims provisions. In addition, we from time to time receive inquiries from federal, state and foreign agencies regarding compliance with various laws and regulations.

In our opinion, the amount of ultimate liability with respect to any of these other actions is unlikely to materially affect our financial position, results of operations or cash flows, though the resolutions and outcomes, individually or in the aggregate, could be material to our financial position, operating results or cash flows for any particular period, depending, in part, upon the operating results for such period.

We also indemnify our directors, officers and employees for certain liabilities that might arise from the performance of their responsibilities for us. Additionally, in the normal course of its business, we enter into contracts pursuant to which we may make a variety of representations and warranties and indemnify the counterparty for certain losses. Our possible exposure under these arrangements cannot be reasonably estimated as this involves the resolution of claims made, or future claims that may be made, against us or our officers, directors or employees, the outcomes of which are unknown and not currently predictable or estimable.

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NOTE 21. SEGMENT REPORTING

Operating segments are business components of an enterprise for which separate financial information is available and regularly evaluated by our chief operating decision maker ("CODM"), who is our Chief Executive Officer. We operate in two business segments, Hughes and ESS, as described in *Note 1. Organization and Business Activities*.

The primary measure of segment profitability that is reported regularly to our CODM is earnings before interest, taxes, depreciation and amortization and net income (loss) attributable to non-controlling interests, or EBITDA. Total assets by segment have not been reported herein because the information is not provided to our CODM on a regular basis.

The following table presents revenue, EBITDA and capital expenditures for each of our operating segments. Capital expenditures are net of refunds and other receipts related to property and equipment.

	Hughes	ESS	Corporate and Other	Consolidated Total
For the year ended December 31, 2019				
External revenue	\$ 1,852,742	\$ 15,131	\$ 18,208	\$ 1,886,081
Intersegment revenue	—	1,126	(1,126)	—
Total revenue	<u>\$ 1,852,742</u>	<u>\$ 16,257</u>	<u>\$ 17,082</u>	<u>\$ 1,886,081</u>
EBITDA	<u>\$ 625,660</u>	<u>\$ 6,994</u>	<u>\$ (55,055)</u>	<u>\$ 577,599</u>
Capital expenditures	<u>\$ 308,781</u>	<u>\$ —</u>	<u>\$ 109,293</u>	<u>\$ 418,074</u>
For the year ended December 31, 2018				
External revenue	\$ 1,716,169	\$ 27,009	\$ 19,460	\$ 1,762,638
Intersegment revenue	359	222	(581)	—
Total revenue	<u>\$ 1,716,528</u>	<u>\$ 27,231</u>	<u>\$ 18,879</u>	<u>\$ 1,762,638</u>
EBITDA	<u>\$ 601,319</u>	<u>\$ 17,764</u>	<u>\$ (150,582)</u>	<u>\$ 468,501</u>
Capital expenditures	<u>\$ 390,108</u>	<u>\$ (76,757)</u>	<u>\$ 164,091</u>	<u>\$ 477,442</u>
For the year ended December 31, 2017				
External revenue	\$ 1,476,131	\$ 30,405	\$ 18,619	\$ 1,525,155
Intersegment revenue	1,787	12	(1,799)	—
Total revenue	<u>\$ 1,477,918</u>	<u>\$ 30,417</u>	<u>\$ 16,820</u>	<u>\$ 1,525,155</u>
EBITDA	<u>\$ 475,222</u>	<u>\$ 16,074</u>	<u>\$ 1,008</u>	<u>\$ 492,304</u>
Capital expenditures	<u>\$ 376,502</u>	<u>\$ 20,026</u>	<u>\$ 169,157</u>	<u>\$ 565,685</u>

The following table reconciles total consolidated EBITDA to reported *Income (loss) from continuing operations before income taxes* in the Consolidated Statements of Operations:

	For the Years Ended December 31,		
	2019	2018	2017
EBITDA	\$ 577,599	\$ 468,501	\$ 492,304
Interest income	82,352	80,275	44,619
Interest expense, net of amounts capitalized	(251,016)	(219,288)	(184,389)
Depreciation and amortization	(490,765)	(457,116)	(385,662)
Net income (loss) attributable to non-controlling interests	(11,335)	1,842	928
Income (loss) from continuing operations before income taxes	<u>\$ (93,165)</u>	<u>\$ (125,786)</u>	<u>\$ (32,200)</u>

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Geographic Information

The following table summarizes total long-lived assets attributed to the North America, South and Central America and other foreign locations:

	As of December 31,	
	2019	2018
Long-lived assets:		
North America	\$ 3,092,773	\$ 3,201,459
South and Central America	310,226	192,932
All other	140,797	118,718
Total long-lived assets	\$ 3,543,796	\$ 3,513,109

NOTE 22. QUARTERLY FINANCIAL DATA (UNAUDITED)

Our quarterly results of operations are summarized as follows:

	For the Three Months Ended			
	December 31	September 30	June 30	March 31
Year Ended December 31, 2019				
Total revenue	\$ 499,006	\$ 472,262	\$ 460,431	\$ 454,382
Operating income (loss)	23,597	26,093	(4,661)	28,048
Net income (loss)	(63,094)	(21,106)	(5,060)	15,008
Net income (loss) from continuing operations attributable to EchoStar common stock	(46,297)	(20,317)	(30,660)	(5,044)
Net income (loss) attributable to EchoStar Corporation common stock	(53,118)	(18,309)	(5,692)	14,202
Basic income (loss) from continuing operations per share	(0.48)	(0.21)	(0.32)	(0.05)
Basic earnings (losses) per share	(0.55)	(0.19)	(0.06)	0.15
Diluted earnings (losses) per share	(0.55)	(0.19)	(0.06)	0.15
Year Ended December 31, 2018				
Total revenue	\$ 453,983	\$ 456,274	\$ 438,549	\$ 413,832
Operating income (loss)	(50,776)	38,328	32,977	15,608
Net income (loss)	(111,648)	16,502	77,684	(21,171)
Net income (loss) from continuing operations attributable to EchoStar common stock	(129,324)	(3,572)	55,779	(57,087)
Net income (loss) attributable to EchoStar common stock	(112,198)	16,052	77,222	(21,551)
Basic income (loss) from continuing operations per share	(1.33)	(0.04)	0.58	(0.60)
Basic earnings (losses) per share	(1.17)	0.17	0.80	(0.22)
Diluted earnings (losses) per share	(1.17)	0.17	0.80	(0.22)

ECHOSTAR CORPORATION
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As the result of an immaterial adjustment recorded in the third quarter of 2019, amounts may not be comparable to amounts previously reported.

NOTE 23. RELATED PARTY TRANSACTIONS - DISH NETWORK

Overview

EchoStar Corporation and DISH have operated as separate publicly-traded companies since 2008. A substantial majority of the voting power of the shares of each of EchoStar Corporation and DISH is owned beneficially by Charles W. Ergen, our Chairman, and by certain entities established for the benefit of his family. In addition, prior to the consummation of the Share Exchange in February 2017, DISH Network owned the Tracking Stock, which represented an aggregate 80% economic interest in the residential retail satellite broadband business of our Hughes segment. Following the consummation of the Share Exchange, the Tracking Stock was retired.

In connection with and following the Spin-off, the Share Exchange and the BSS Transaction, we and DISH Network entered into certain agreements pursuant to which we obtain certain products, services and rights from DISH Network; DISH Network obtains certain products, services and rights from us; and we and DISH Network indemnify each other against certain liabilities arising from our respective businesses. Generally, the amounts we or DISH Network pay for products and services provided under the agreements are based on cost plus a fixed margin (unless noted differently below), which varies depending on the nature of the products and services provided. We may also enter into additional agreements with DISH Network in the future.

The following is a summary of the transactions and the terms of the underlying principal agreements that have had or may have an impact on our consolidated financial condition and results of operations.

Services and Other Revenue — DISH Network

A summary of our *Services and other revenue - DISH Network* follows:

	For the years ended December 31,		
	2019	2018	2017
Services and other revenue - DISH Network	\$ 53,429	\$ 73,465	\$ 108,619

A summary of the related trade accounts receivable follows:

	As of December 31,	
	2019	2018
Trade accounts receivable - DISH Network	\$ 10,683	\$ 14,200

Satellite Capacity Leased to DISH Network. We have entered into an agreement and have previously entered into a now terminated agreement to lease satellite capacity pursuant to which we have provided satellite services to DISH Network on certain satellites owned or leased by us. The fees for the services provided under these agreements depend upon, among other things, the orbital location of the applicable satellite, the number of transponders that are providing services on the applicable satellite and the length of the service arrangements. The terms of these agreements are set forth below:

EchoStar IX. Effective January 2008, DISH Network began leasing satellite capacity from us on the EchoStar IX satellite. Subject to availability, DISH Network generally has the right to continue leasing satellite capacity from us on the EchoStar IX satellite on a month-to-month basis.

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103 Degree Orbital Location/SES-3. In May 2012, we entered into a spectrum development agreement (the "103 Spectrum Development Agreement") with Ciel Satellite Holdings Inc. ("Ciel") to develop certain spectrum rights at the 103 degree west longitude orbital location (the "103 Spectrum Rights"). In June 2013, we and DISH Network entered into a spectrum development agreement (the "DISH 103 Spectrum Development Agreement") pursuant to which DISH Network may use and develop the 103 Spectrum Rights. Effective in March 2018, DISH Network exercised its right to terminate the DISH 103 Spectrum Development Agreement and we exercised our right to terminate the 103 Spectrum Development Agreement.

In connection with the 103 Spectrum Development Agreement, in May 2012, we also entered into a ten-year agreement with Ciel pursuant to which we leased certain satellite capacity from Ciel on the SES-3 satellite at the 103 degree west longitude orbital location (the "Ciel 103 Agreement"). In June 2013, we and DISH Network entered into an agreement pursuant to which DISH Network leased certain satellite capacity from us on the SES-3 satellite (the "DISH 103 Agreement"). Under the terms of the DISH 103 Agreement, DISH Network made certain monthly payments to us through the service term. Effective in March 2018, DISH Network exercised its right to terminate the DISH 103 Agreement and we exercised our right to terminate the Ciel 103 Agreement.

Telesat Obligation Agreement. We transferred the Telesat Transponder Agreement to DISH Network as part of the BSS Transaction; however, we retained certain obligations related to DISH Network's performance under that agreement. In September 2019, we and DISH Network entered into an agreement whereby DISH Network compensates us for retaining such obligations.

Real Estate Leases to DISH Network. We have entered into lease agreements pursuant to which DISH Network leases certain real estate from us. 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 at the time of the leases or subsequent amendments and includes DISH Network's portion of the taxes, insurance, utilities and/or maintenance of the premises. The terms of each of the leases are set forth below:

100 Inverness Occupancy License Agreement. Effective March 2017, DISH Network is licensed to use certain of our space at 100 Inverness Terrace East, Englewood, Colorado for a period ending in December 2020. This agreement may be terminated by either party upon 180 days' prior notice. This agreement may be extended by mutual consent, in which case this agreement will be converted to a month-to-month lease agreement. Upon extension, either party has the right to terminate this agreement upon 30 days' notice. In connection with the BSS Transaction, we transferred to DISH Network the Englewood Satellite Operations Center located at 100 Inverness Terrace East, including any and all equipment, hardware licenses, software, processes, software licenses, furniture and technical documentation associated with the satellites transferred in the BSS Transaction.

Meridian Lease Agreement. The lease for all of 9601 S. Meridian Blvd., Englewood, Colorado was originally for a period ending in December 2016. We and DISH Network have amended this lease over time to, among other things, extend the term through December 2020. After December 2020, this agreement may be converted by mutual consent to a month-to-month lease agreement with either party having the right to terminate upon 30 days' notice.

TerreStar Agreement. In March 2012, DISH Network completed its acquisition of substantially all the assets of TerreStar Networks Inc. ("TerreStar"). Prior to DISH Network's acquisition of substantially all the assets of TerreStar and our completion of the Hughes Acquisition, TerreStar and HNS entered into various agreements pursuant to which we provide, among other things, warranty, operations and maintenance and hosting services for TerreStar's ground-based communications equipment. In December 2017, we and DISH Network amended these agreements, effective as of January 1, 2018, to reduce certain pricing terms through December 31, 2023 and to modify certain termination provisions. DISH Network generally has the right to continue to receive warranty services from us for our products on a month-to-month basis unless terminated by DISH Network upon at least 21 days' written notice to us. DISH Network generally has the right to continue to receive operations and maintenance services from us on a quarter-to-quarter basis unless operations and maintenance services are terminated by DISH Network upon at least 90 days' written notice to us. The provision of hosting services will continue until May 2022. In addition, DISH Network generally may terminate any and all services for convenience subject to providing us with prior notice and/or payment of termination charges.

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Hughes Broadband Distribution Agreement. Effective October 2012, we and DISH Network, entered into a distribution agreement (the "Distribution Agreement") pursuant to which DISH Network has the right, but not the obligation, to market, sell and distribute our HughesNet service. DISH Network pays us a monthly per subscriber wholesale service fee for the HughesNet service based upon a subscriber's service level and based upon certain volume subscription thresholds. The Distribution Agreement also provides that DISH Network has the right, but not the obligation, to purchase certain broadband equipment from us to support the sale of the HughesNet service. The Distribution Agreement had an initial term of five years with automatic renewal for successive one year terms unless terminated by either party with a written notice at least 180 days' before the expiration of the then-current term. In February 2014, we and DISH Network entered into an amendment to the Distribution Agreement which, among other things, extended the initial term of the Distribution Agreement until March 2024. Upon expiration or termination of the Distribution Agreement, we and DISH Network will continue to provide our HughesNet service to the then-current DISH Network subscribers pursuant to the terms and conditions of the Distribution Agreement.

DBSD North America Agreement. In March 2012, DISH Network completed its acquisition of all of the equity of reorganized DBSD North America, Inc. ("DBSD North America"). Prior to DISH Network's acquisition of DBSD North America and our completion of the Hughes Acquisition, DBSD North America and HNS entered into various agreements pursuant to which we provide, among other things, warranty, operations and maintenance and hosting services of DBSD North America's gateway and ground-based communications equipment. In December 2017, we and DBSD North America amended these agreements, effective as of January 1, 2018, to reduce certain pricing terms through December 31, 2023 and to modify certain termination provisions. DBSD North America has the right to continue to receive operations and maintenance services from us on a quarter-to-quarter basis, unless terminated by DBSD North America upon at least 120 days' written notice to us. In February 2019, we further amended these agreements to provide DBSD North America with the right to continue to receive warranty services from us on a month-to-month basis until December 2023, unless terminated by DBSD North America upon at least 21 days' written notice to us. The provision of hosting services will continue until February 2022 and will automatically renew for an additional five-year period until February 2027 unless terminated by DBSD North America upon at least 180 days' written notice to us. In addition, DBSD North America generally may terminate any and all such services for convenience, subject to providing us with prior notice and/or payment of termination charges.

Hughes Equipment and Services Agreement. In February 2019, we and DISH Network entered into an agreement pursuant to which we will sell to DISH Network our HughesNet Service and HughesNet equipment that has been modified to meet DISH Network's internet-of-things specifications for the transfer of data to DISH Network's network operations centers. This agreement has an initial term of five years expiring February 2024 with automatic renewal for successive one-year terms unless terminated by DISH Network with at least 180 days' written notice to us or by us with at least 365 days' written notice to DISH Network.

Operating Expenses — DISH Network

A summary of our operating expenses - DISH Network follows:

	For the years ended December 31,		
	2019	2018	2017
Operating expenses - DISH Network	\$ 5,198	\$ 3,889	\$ 3,787

A summary of the related trade accounts payable follows:

	As of December 31,	
	2019	2018
Trade accounts payable - DISH Network	\$ 1,923	\$ 1,698

Amended and Restated Professional Services Agreement. In connection with the Spin-off, we entered into various agreements with DISH Network including a transition services agreement, satellite procurement agreement and

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services agreement, all of which expired in January 2010 and were replaced by a professional services agreement (the "Professional Services Agreement"). In January 2010, we and DISH Network agreed that we continue to have the right, but not the obligation, to receive the following services from DISH Network, among others, certain of which were previously provided under a transition services agreement: information technology, travel and event coordination, internal audit, legal, accounting and tax, benefits administration, program acquisition services and other support services. Mr. Vivek Khemka, who was then employed as DISH Network's Executive Vice President and Chief Technology Officer, provided services to us during portions of 2016 and through February 2017 pursuant to the Professional Services Agreement as President -- EchoStar Technologies L.L.C. Additionally, we and DISH Network agreed that DISH Network would continue to have the right, but not the obligation, to engage us to manage the process of procuring new satellite capacity for DISH Network (previously provided under a satellite procurement agreement), receive logistics, procurement and quality assurance services from us (previously provided under a services agreement) and provide other support services. In connection with the consummation of the Share Exchange, we and DISH amended and restated the Professional Services Agreement to provide that we and DISH Network shall have the right to receive additional services that either we or DISH Network may require as a result of the Share Exchange, including access to antennas owned by DISH Network for our use in performing TT&C services and maintenance and support services for our antennas (collectively, the "TT&C Antennas"). In September 2019, in connection with the BSS Transaction, we and DISH further amended the Professional Services Agreement (the "Amended and Restated Professional Services Agreement") to provide that we and DISH Network shall have the right to receive additional services that either we or DISH Network may require as a result of the BSS Transaction and to remove our access to and the maintenance and support services for the TT&C Antennas. The term of the Amended and Restated Professional Services Agreement is through January 2021 and renews automatically for successive one-year periods thereafter, unless the agreement is terminated earlier by either party upon at least 60 days' notice. We or DISH Network may generally terminate the Amended and Restated Professional Services Agreement in part with respect to any particular service it receives for any reason upon at least 30 days' notice, unless the statement of work for particular services states otherwise. Certain services being provided for under the Amended and Restated Professional Services Agreement may survive the termination of the agreement.

Real Estate Leases from DISH Network. We have entered into lease agreements pursuant to which we lease certain real estate from DISH Network. The rent on a per square foot basis is comparable to per square foot rental rates of similar commercial property in the same geographic area at the time of the leases or subsequent amendments and, includes our portion of the taxes, insurance, utilities and/or maintenance of the premises.

Cheyenne Lease Agreement. Effective March 2017, we entered into a lease with DISH Network for certain space at 530 EchoStar Drive in Cheyenne, Wyoming for a period ending in February 2019. In August 2018, we exercised our option to renew this lease for a one year period ending in February 2020. In connection with the BSS Transaction, we transferred the Cheyenne Satellite Operations Center, including any equipment, software licenses, and furniture located within, to DISH Network and amended this lease to reduce the space provided to us for the Cheyenne Satellite Access Center for a period ending in September 2021, with the option for us to renew for a one year period upon 180 days' written notice prior to the end of the term.

American Fork Occupancy License Agreement. Effective March 2017, we entered into an agreement with DISH Network for certain space at 796 East Utah Valley Drive in American Fork, Utah for a period ending in August 2017. We exercised our option to renew this agreement for a five-year period ending in August 2022. We and DISH Network amended this agreement to, among other things, terminate this agreement in March 2019.

Collocation and Antenna Space Agreements. We and DISH Network have entered into an agreement pursuant to which DISH Network provides us with collocation space in El Paso, Texas. This agreement was for an initial period ending in August 2015, and provides us with renewal options for four consecutive years. Effective August 2015, we exercised our first renewal option for a period ending in August 2018 and in April 2018 we exercised our second renewal option for a period ending in August 2021. In connection with the Share Exchange, effective March 2017, we also entered into certain agreements pursuant to which DISH Network provides collocation and antenna space to EchoStar through February 2022 at the following locations: Cheyenne, Wyoming; Gilbert, Arizona; New Braunfels, Texas; Monee, Illinois; Spokane, Washington; and Englewood, Colorado. In October 2019, we provided a termination notice for our New Braunfels, Texas agreement to be effective May 2020. In August 2017, we and DISH Network also entered into certain other agreements pursuant to which DISH Network provides additional collocation and antenna space to us in

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Monee, Illinois and Spokane, Washington through August 2022. Generally, we may renew our collocation and antenna space agreements for three-year periods by providing DISH Network with prior written notice no more than 120 days but no less than 90 days prior to the end of the then-current term. We may terminate certain of these agreements with 180 days' prior written notice. In September 2019, in connection with the BSS Transaction, we entered into an agreement pursuant to which DISH Network provides us with certain additional collocation space in Cheyenne, Wyoming for a period ending in September 2020, with the option for us to renew for a one-year period, with prior written notice no more than 120 days but no less than 90 days prior to the end of the term. The fees for the services provided under these agreements depend on the number of racks located at the location.

Also in connection with the BSS Transaction, in September 2019, we entered into an agreement pursuant to which DISH Network will provide us 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.

Hughes Broadband Master Services Agreement. In March 2017, we and DISH Network entered into a master service agreement (the "Hughes Broadband MSA") pursuant to which DISH Network, among other things: (i) has the right, but not the obligation, to market, promote and solicit orders and upgrades for our HughesNet service and related equipment and other telecommunication services and (ii) installs HughesNet service equipment with respect to activations generated by DISH Network. Under the Hughes Broadband MSA, we and DISH Network make certain payments to each other relating to sales, upgrades, purchases and installation services. The Hughes Broadband MSA has an initial term of five years through March 2022 with automatic renewal for successive one-year terms. Either party has the ability to terminate the Hughes Broadband 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 Hughes Broadband MSA, we will continue to provide our HughesNet service to subscribers and make certain payments to DISH Network pursuant to the terms and conditions of the Hughes Broadband MSA. We incurred sales incentives and other costs under the Hughes Broadband MSA totaling \$17.1 million, \$33.2 million and \$29.3 million for the years ended December 31, 2019, 2018 and 2017, respectively.

2019 TT&C Agreement. In September 2019, in connection with the BSS Transaction, we entered into an agreement pursuant to which DISH Network provides TT&C services to us for a period ending in September 2021, with the option for us to renew for a one-year period upon written notice at least 90 days prior to the initial expiration (the "2019 TT&C Agreement"). The fees for services provided under the 2019 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. Any party is able to terminate the 2019 TT&C Agreement for any reason upon 12 months' notice.

Other Receivables - DISH Network

A summary of our *Other receivables - DISH Network* follows:

	As of December 31,	
	2019	2018
Other receivables - DISH Network	92,892	95,114

Tax Sharing Agreement. Effective December 2007, we and DISH Network entered into a tax sharing agreement (the "Tax Sharing Agreement") in connection with the Spin-off. This agreement governs our and DISH Network's 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 DISH Network and DISH Network indemnifies us for such taxes. However, DISH Network is not liable for and does not indemnify us 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 Code, because of: (i) a direct or indirect acquisition of any of our stock, stock options or assets; (ii) any action that we take or fail to take or (iii) any action that we take that is inconsistent with the information and representations furnished to the 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,

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we will be solely liable for, and will indemnify DISH Network for any resulting taxes, as well as any losses, claims and expenses. The Tax Sharing Agreement will 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, in September 2013, we and DISH Network agreed upon a supplemental allocation of the tax benefits arising from certain tax items resolved in the course of the IRS's examination of our consolidated tax returns. Prior to the agreement with DISH Network in 2013, the federal tax benefits were reflected as a deferred tax asset for depreciation and amortization, which was netted in our non-current deferred tax liabilities. The agreement with DISH Network in 2013 requires DISH Network to pay us the federal tax benefit it receives at such time as we would have otherwise been able to realize such tax benefit. We recorded a non-current receivable from DISH Network in *Other receivables - DISH Network* and a corresponding increase in our *Deferred tax liabilities, net* to reflect the effects of this agreement in September 2013. In addition, in September 2013, we and DISH Network 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 DISH Network for such combined returns, through the taxable period ending on December 31, 2017 (the "State Tax Arrangement").

In August 2018, we and DISH Network amended the Tax Sharing Agreement and the 2013 agreements (the "Tax Sharing Amendment"). Under the Tax Sharing Amendment, to the extent permitted by applicable tax law, DISH Network is entitled to apply the benefit of our 2009 net operating losses (the "SATS 2009 NOLs") to DISH Network's federal tax return for the year ended December 31, 2008, in exchange for DISH Network paying us over time the value of the net annual federal income taxes paid by us that would have been otherwise offset by the SATS 2009 NOLs. The Tax Sharing Amendment also requires us and DISH Network to pay the other for the benefits of certain past and future federal research and development tax credits that we or DISH Network receive or received as a result of being part of a controlled group under the Code, and requires DISH Network to compensate us for certain past tax losses utilized by DISH Network and for certain past and future excess California research and development tax credits generated by us and used by DISH Network. In addition, the Tax Sharing Amendment extends the term of the State Tax Arrangement to the earlier to occur of termination of the Tax Sharing Agreement, a change in control of either us or DISH Network or, for any particular state, if we and DISH Network no longer file a combined tax return for such state.

We and DISH Network file combined income tax returns in certain states. We have earned and recognized tax benefits for certain state income tax credits that we would be unable to utilize currently if we had filed separately from DISH Network. We have charged *Additional paid-in capital* in prior periods when DISH Network has utilized such tax benefits. We expect to increase *Additional paid-in capital* upon receipt of any consideration that DISH Network pays to us in exchange for these tax credits. For the years ended December 31, 2019, 2018 and 2017, DISH Network has utilized tax provisions of \$1.6 million, tax benefits of \$1.8 million and tax benefits of \$1.6 million, respectively.

Other Agreements

Master Transaction Agreement. In May 2019, we and BSS Corp. entered into the Master Transaction Agreement with DISH and Merger Sub with respect to the BSS Transaction. Pursuant to the terms of the Master Transaction Agreement, on September 10, 2019: (i) we transferred the BSS Business to BSS Corp.; (ii) we completed the Distribution; and (iii) immediately after the Distribution, (1) BSS Corp. became a wholly-owned subsidiary of DISH such that DISH owns and operates the BSS Business and (2) each issued and outstanding share of BSS Common Stock owned by EchoStar stockholders was converted into the right to receive 0.23523769 shares of DISH Common Stock. Following the consummation of the BSS Transaction, we no longer operate the BSS Business, which was a substantial portion of our ESS segment. The Master Transaction Agreement contained customary representations and warranties by us and DISH Network, including our representations relating to the assets, liabilities and financial condition of the BSS Business, and representations by DISH Network relating to its financial condition and liabilities. We and DISH Network have agreed to indemnify each other against certain losses with respect to breaches of certain representations and covenants and certain retained and assumed liabilities, respectively.

BSS Transaction Intellectual Property and Technology License Agreement. Effective September 2019, in connection with the BSS Transaction, we and DISH Network entered into an intellectual property and technology license agreement (the "BSS IPTLA") pursuant to which we and DISH Network license to each other certain intellectual property and technology. The BSS IPTLA will continue in perpetuity, unless mutually terminated by the parties. Pursuant to

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

the BSS IPTLA, we granted to DISH Network a license to our intellectual property and technology for use by DISH Network, among other things, in connection with its continued operation of the BSS Business acquired pursuant to the BSS Transaction, including a limited license to use the "ESS" and "ECHOSTAR SATELLITE SERVICES" trademarks during a transition period. EchoStar retains full ownership of the "ESS" and "ECHOSTAR SATELLITE SERVICES" trademarks. In addition, DISH Network granted a license back to us, among other things, for the continued use of all intellectual property and technology that is used in our retained businesses but the ownership of which was transferred to DISH Network pursuant to the BSS Transaction.

BSS Transaction Tax Matters Agreement. Effective September 2019, in connection with the BSS Transaction, we, BSS Corp. and DISH entered into a tax matters agreement. This agreement governs certain of our rights, responsibilities and obligations with respect to taxes of the BSS Business transferred pursuant to the BSS Transaction. Generally, we are responsible for all tax returns and tax liabilities for the BSS Business for periods prior to the BSS Transaction and DISH is responsible for all tax returns and tax liabilities for the BSS Business from and after the BSS Transaction.

Both we and DISH made certain tax-related representations and are subject to various tax-related covenants after the consummation of the BSS Transaction. Both we and DISH Network have agreed to indemnify each other for certain losses if there is a breach of any the tax representations or violation of any of the tax covenants in the tax matters agreement and that breach or violation results in the failure of the BSS Transaction being treated as a transaction that is tax-free for EchoStar or its stockholders for U.S. federal income tax purposes. In addition, DISH Network has agreed to indemnify us if the BSS Business is acquired, either directly or indirectly (e.g., via an acquisition of DISH Network), by one or more persons, where either it took an action, or knowingly facilitated, consented to or assisted with an action by its stockholders, that resulted in the failure of the BSS Transaction being treated as a transaction that is tax-free for EchoStar and its stockholders for U.S. federal income tax purposes. This tax matters agreement supplements the Tax Sharing Agreement outlined above and the Share Exchange Tax Matters Agreement outlined below, both of which continue in full force and effect.

BSS Transaction Employee Matters Agreement. Effective September 2019, in connection with the BSS Transaction, we and DISH Network entered into an employee matters agreement that addressed the transfer of employees from us to DISH Network, including certain benefit and compensation matters and the allocation of responsibility for employee related liabilities relating to current and past employees of the BSS Business. DISH Network assumed employee-related liabilities relating to the BSS Business as part of the BSS Transaction, except that we are responsible for certain pre-BSS Transaction compensation and benefits for employees who transferred to DISH Network in connection with the BSS Transaction.

Share Exchange Agreement. In January 2017, we and certain of our subsidiaries entered into a share exchange agreement (the "Share Exchange Agreement") with DISH and certain of its subsidiaries pursuant to which, in February 2017, we received all of the shares of the Tracking Stock in exchange for 100% of the equity interests of certain EchoStar subsidiaries that held substantially all of our EchoStar Technologies businesses and certain other assets. Following consummation of the Share Exchange, we no longer operate the transferred EchoStar Technologies businesses and the Tracking Stock was retired and is no longer outstanding and all agreements, arrangements and policy statements with respect to such Tracking Stock terminated and are of no further effect. Pursuant to the Share Exchange Agreement, we transferred certain assets, investments in joint ventures, spectrum licenses and real estate properties and DISH Network assumed certain liabilities relating to the transferred assets and businesses. The Share Exchange Agreement contained customary representations and warranties by the parties, including representations by us related to the transferred assets, assumed liabilities and the financial condition of the transferred businesses. We and DISH Network also agreed to customary indemnification provisions whereby each party indemnifies the other against certain losses with respect to breaches of representations, warranties or covenants and certain liabilities and if certain actions undertaken by us or DISH causes the transaction to be taxable to the other party after closing.

Share Exchange Intellectual Property and Technology License Agreement. Effective March 2017, in connection with the Share Exchange, we and DISH Network entered into an intellectual property and technology license agreement ("IPTLA") pursuant to which we and DISH Network 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, we granted to DISH Network a license to our intellectual property and technology for use by DISH Network, among other things, in connection with its continued operation of the businesses acquired pursuant to the Share Exchange, including a limited license to use the "ECHOSTAR" trademark during a transition period. EchoStar retains full ownership of the

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

"ECHOSTAR" trademark. In addition, DISH Network granted a license back to us, among other things, for the continued use of all intellectual property and technology that is used in our retained businesses but the ownership of which was transferred to DISH Network pursuant to the Share Exchange.

Share Exchange Tax Matters Agreement. Effective March 2017, in connection with the Share Exchange, we and DISH entered into a tax matters agreement. This agreement governs certain of our rights, responsibilities and obligations with respect to taxes of the transferred businesses pursuant to the Share Exchange. Generally, we are responsible for all tax returns and tax liabilities for the transferred businesses and assets for periods prior to the Share Exchange and DISH Network is responsible for all tax returns and tax liabilities for the transferred businesses and assets from and after the Share Exchange. Both we and DISH Network made certain tax-related representations and are subject to various tax-related covenants after the consummation of the Share Exchange. Both we and DISH Network 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, DISH Network has agreed to indemnify us if the transferred businesses are acquired, either directly or indirectly (e.g., via an acquisition of DISH Network), 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 outlined above which continues in full force and effect.

Share Exchange Employee Matters Agreement. Effective March 2017, in connection with the Share Exchange, we and DISH Network entered into an employee matters agreement that addressed the transfer of employees from us to DISH Network, including certain benefit and compensation matters and the allocation of responsibility for employee related liabilities relating to current and past employees of the transferred businesses. DISH Network assumed employee-related liabilities relating to the transferred businesses as part of the Share Exchange, except that we are responsible for certain existing employee related litigation as well as certain pre-Share Exchange compensation and benefits for employees who transferred to DISH Network in connection with the Share Exchange.

Patent Cross-License Agreements. In December 2011, we and DISH Network entered into separate patent cross-license agreements with the same third party, whereby: (i) we and such third party licensed our respective patents to each other subject to certain conditions and (ii) DISH Network and such third party licensed their 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 2017 and aggregate payments under both Cross-License Agreements were less than \$10.0 million. Each Cross-License Agreement contained an option to extend each Cross-License Agreement to include patents acquired by the respective party prior to January 2022. In December 2016, both we and DISH Network exercised our respective renewal options, resulting in aggregate additional payments to such third party totaling less than \$3.0 million. Since the aggregate payments under both Cross-License Agreements were based on the combined annual revenue of us and DISH Network, we and DISH Network agreed to allocate our respective payments to such third party based on our respective percentage of combined total revenue.

NOTE 24. RELATED PARTY TRANSACTIONS - OTHER

Hughes Systique Corporation ("Hughes Systique")

We contract with Hughes Systique for software development services. In addition to our approximately 43% ownership in Hughes Systique, Mr. Pradman Kaul, the President of our subsidiary Hughes Communications, Inc., and a member of our board of directors, and his brother, who is the Chief Executive Officer and President of Hughes Systique, in the aggregate, own approximately 25%, on an undiluted basis, of Hughes Systique's outstanding shares as of December 31, 2019. Furthermore, Mr. Pradman Kaul serves on the board of directors of Hughes Systique. Hughes Systique is a variable interest entity and we are considered the primary beneficiary of Hughes Systique due to, among other factors, our ability to direct the activities that most significantly impact the economic performance of Hughes Systique. As a result, we consolidate Hughes Systique's financial statements in these Consolidated Financial Statements.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

TerreStar Solutions

DISH Network owns more than 15% of TerreStar Solutions, Inc. ("TSI"). In May 2018, we and TSI entered into an equipment and services agreement pursuant to which we design, manufacture and install upgraded ground communications network equipment for TSI's network and provide, among other things, warranty and support services. We recognized revenue of \$12.5 million and \$6.0 million for the years ended December 31, 2019 and 2018. As of December 31, 2019 and 2018, we had \$2.7 million and \$2.3 million trade accounts receivable from TSI.

Global IP

In May 2017, we entered into an agreement with Global-IP Cayman ("Global IP") providing for the sale of certain equipment and services to Global IP. Mr. William David Wade, a member of our board of directors, served as a member of the board of directors of Global IP and as an executive advisor to the Chief Executive Officer of Global IP from September 2017 until April 2019 and from September 2017 until December 2019, respectively. In August 2018, we and Global IP amended the agreement to: (i) change certain of the equipment and services to be provided to Global IP, (ii) modify certain payment terms, (iii) provide Global IP an option to use one of our test lab facilities and (iv) effectuate the assignment of the agreement from Global IP to one of its wholly-owned subsidiaries. In February 2019, we terminated the agreement as a result of Global IP's defaults resulting from its failure to make payments to us as required under the terms of the agreement and we reserved our rights and remedies against Global IP under the agreement. We recognized revenue under this agreement of zero, \$9.0 million and \$0.3 million for the years ended December 31, 2019, 2018 and 2017, respectively. As of December 31, 2019 and 2018, we were owed \$7.5 million from Global IP.

Maxar Technologies Inc.

Mr. Jeffrey Tarr, who joined our board of directors in March 2019, served as a consultant and advisor to Maxar Technologies Inc. and its subsidiaries ("Maxar Tech") through May 2019. We previously entered into agreements with Maxar Tech for the manufacture and certain other services of the EchoStar IX satellite, the EchoStar XVII satellite, the EchoStar XIX satellite, the EchoStar XXI satellite and the EchoStar XXIV satellite and our former EchoStar XI satellite, EchoStar XIV satellite, EchoStar XVI satellite and EchoStar XXIII satellite. Maxar Tech provides us with anomaly support for these satellites once launched pursuant to the terms of the agreements. Maxar Tech also provides a warranty on one of these satellites and may be required to pay us certain amounts should the satellite not operate according to certain performance specifications. Our obligations to pay Maxar Tech under these agreements during the design life of the applicable satellites may be reduced if the applicable satellites do not operate according to certain performance specifications. We incurred aggregate costs payable to Maxar Tech under these agreements of \$90.3 million for the year ended December 31, 2019.

AsiaSat

In 2017, we had a contract with AsiaSat Telecommunications Inc. ("AsiaSat") for the use of transponder capacity on one of AsiaSat's satellites. Mr. William David Wade, who joined our board of directors in February 2017, served as the Chief Executive Officer of AsiaSat in 2016 and as a senior advisor to the Chief Executive Officer of AsiaSat through March 2017. We incurred expenses payable to AsiaSat under this agreement of \$0.1 million for the year ended December 31, 2017.

NOTE 25. SUPPLEMENTAL FINANCIAL INFORMATION

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Research and Development

The table below summarizes the research and development costs incurred in connection with customers' orders included in cost of sales and other expenses:

	For the years ended December 31,		
	2019	2018	2017
Cost of sales - equipment	\$ 24,495	\$ 23,422	\$ 27,899
Research and development expenses	25,739	27,570	31,745

Advertising Costs

We incurred advertising expense of \$88.2 million, \$75.8 million and \$64.2 million for the years ended December 31, 2019, 2018 and 2017, respectively.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Other Current Assets, Other Non-Current Assets, Net and Accrued Expenses and Other Current Liabilities

Other current assets, Other non-current assets, net and Accrued expenses and other current liabilities consist of the following:

	As of December 31,	
	2019	2018
Other current assets:		
Trade accounts receivable - DISH Network	\$ 10,683	\$ 14,200
Inventory	79,621	75,379
Prepays and deposits	67,014	57,691
Other	22,213	18,539
Total other current assets	\$ 179,531	\$ 165,809
Other non-current assets, net:		
Other receivables - DISH Network	\$ 92,892	\$ 95,114
Restricted marketable investment securities	8,093	9,474
Restricted cash	2,458	1,189
Deferred tax assets, net	7,251	4,310
Capitalized software, net	101,786	96,760
Contract acquisition costs, net	96,723	104,013
Contract fulfillment costs, net	3,010	3,240
Other	22,628	24,290
Total other non-current assets, net	\$ 334,841	\$ 338,390
Accrued expenses and other current liabilities:		
Trade accounts payable - DISH Network	\$ 1,923	\$ 1,698
Accrued interest	42,622	45,350
Accrued compensation	50,787	54,242
Accrued taxes	18,525	16,013
Operating lease obligation	14,651	—
Other	141,885	64,395
Total accrued expenses and other current liabilities	\$ 270,393	\$ 181,698

Capitalized Software Costs

As of December 31, 2019 and 2018, the net carrying amount of externally marketed software was \$101.8 million and \$96.8 million, respectively, of which \$38.8 million and \$28.8 million, respectively, was under development and not yet placed in service. We capitalized costs related to the development of externally marketed software of \$29.3 million, \$31.6 million and \$31.3 million and recorded related amortization expense of \$24.3 million, \$23.0 million and \$19.5 million for the years ended December 31, 2019, 2018 and 2017, respectively. The weighted average useful life of our externally marketed software was three years as of December 31, 2019.

ECHOSTAR CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS - CONTINUED

Cash and Cash Equivalents and Restricted Cash

The following table reconciles cash and cash equivalents and restricted cash, as presented in the Consolidated Balance Sheets to the total of the same as presented in the Consolidated Statements of Cash Flows:

	For the years ended December 31,		
	2019	2018	2017
Cash and cash equivalents, including restricted amounts, beginning of period:			
Cash and cash equivalents	\$ 928,306	\$ 2,431,456	\$ 2,571,143
Restricted cash	1,189	793	723
Total cash and cash equivalents, included restricted amounts, beginning of period	<u>\$ 929,495</u>	<u>\$ 2,432,249</u>	<u>\$ 2,571,866</u>
Cash and cash equivalents, including restricted amounts, end of period:			
Cash and cash equivalents	\$ 1,519,431	\$ 928,306	\$ 2,431,456
Restricted cash	2,458	1,189	793
Total cash and cash equivalents, included restricted amounts, end of period	<u>\$ 1,521,889</u>	<u>\$ 929,495</u>	<u>\$ 2,432,249</u>

Non-cash Investing and Financing Activities

The following table presents the non-cash investing and financing activities:

	For the years ended December 31,		
	2019	2018	2017
Employee benefits paid in Class A common stock	\$ 6,654	\$ 7,605	\$ 11,200
Property and equipment financed under finance lease obligations	349	364	8,484
Increase (decrease) in capital expenditures included in accounts payable, net	(11,111)	7,318	(3,831)
Capitalized in-orbit incentive obligations	—	—	43,890
Non-cash net assets exchanged for Tracking Stock (Note 5)	—	—	299,888
Non-cash net assets exchanged for BSS Transaction (Note 5)	532,855	—	—
Non-cash net assets received in exchange for a 20% ownership interest in our existing Brazilian subsidiary	94,918	—	—

**DESCRIPTION OF REGISTRANT’S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934, AS AMENDED**

EchoStar Corporation (“EchoStar,” the “Company,” “we,” “us” and/or “our”) has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended: Class A Common Stock, \$0.001 par value per share.

DESCRIPTION OF CAPITAL STOCK

The summary of the general terms and provisions of the capital stock of EchoStar set forth below does not purport to be complete and is subject to and qualified in its entirety by reference to EchoStar’s Articles of Incorporation (as amended from time to time, the “Articles”) and Bylaws (as amended from time to time, the “Bylaws” and together with the Articles, the “Charter Documents”), each of which is incorporated herein by reference and filed as an exhibit to EchoStar’s most recent Annual Report on Form 10-K filed with the Securities and Exchange Commission. For additional information, please read our Charter Documents and the applicable provisions of the Nevada Revised Statutes.

General

We are authorized to issue the following capital stock:

- 4,000,000,000 shares of common stock, par value \$0.001 per share, of which 1,600,000,000 shares are designated Class A common stock, 800,000,000 shares are designated Class B common stock, 800,000,000 shares are designated Class C common stock and 800,000,000 shares are designated Class D common stock; and
- 20,000,000 shares of preferred stock, par value \$0.001 per share.

A summary of the powers, preferences and rights of the shares of each class of common stock and preferred stock is described below.

Our Class A Common Stock

Each holder of Class A common stock is entitled to one vote for each share owned of record on all matters submitted to a vote of stockholders. Except as otherwise required by law or the terms of any preferred stock, holders of the Class A common stock vote together with the holders of Class B common stock, the holders of Class C common stock and the holders of preferred stock on all matters submitted to a vote of stockholders. Subject to the preferential rights of any outstanding series of preferred stock and to any restrictions on the payment of dividends imposed under the terms of our indebtedness, the holders of Class A common stock are entitled to such dividends as may be declared from time to time by our board of directors from legally available funds and, together with the holders of the Class B common stock and the Class C common stock, are entitled, after payment of all prior claims, to receive pro rata all of our assets upon a liquidation. Holders of Class A common stock have no redemption, conversion or preemptive rights.

Our Class A Common Stock is listed on the NASDAQ Global Select Market under the symbol “SATS”.

Computershare Trust Company, N.A. serves as the transfer agent and registrar of our Class A Common Stock.

Our Class B Common Stock

Each holder of Class B common stock is entitled to ten votes for each share of Class B common stock on all matters submitted to a vote of stockholders. Except as otherwise required by law or the terms of any preferred stock, holders of the Class B common stock vote together with holders of the Class A common stock, holders of the Class C common stock and holders of the preferred stock on all matters submitted to a vote of the stockholders. Each share of Class B common stock is convertible, at the option of the holder, into one share of Class A common stock. The conversion ratio is subject to adjustment from time to time upon the occurrence of certain events, including: (A) dividends or distributions on Class A common stock payable in Class A common stock or certain other capital stock; and (B) subdivisions, combinations or certain reclassifications of Class A common stock. Each share of Class B common stock is entitled to receive dividends and distributions upon liquidation on a basis equivalent to that of the Class A common stock and Class C common stock.

Our Class C Common Stock

Each holder of Class C common stock is entitled to one vote for each share of Class C common stock on all matters submitted to a vote of stockholders, except in the event of a change in control, in which case each Class C holder is entitled to ten votes per share. Except as otherwise required by law or the terms of any preferred stock, holders of the Class C common stock vote together with holders of the Class A common stock, holders of the Class B common stock and holders of the preferred stock on all matters submitted to a vote of stockholders. Each share of Class C common stock is convertible, at the option of the holder, into Class A common stock on the same terms as the Class B common stock. Each share of Class C common stock is entitled to receive dividends and distributions upon liquidation on a basis equivalent to that of the Class A common stock and Class B common stock.

Our Class D Common Stock

Each holder of Class D common stock is not entitled to a vote on any matter. Each share of Class D common stock is entitled to receive dividends and distributions upon liquidation on a basis equivalent to that of the Class A common stock.

Our Preferred Stock

Our board of directors is authorized to designate one or more series of our preferred stock and, with respect to each series, to determine the preferences and rights and the qualifications, limitations or restrictions of the series, including the dividend rights, conversion rights, voting rights, redemption rights and terms, liquidation preferences, sinking fund provisions, the number of shares constituting the series and the designation of such series. Our board of directors may, without stockholder approval, issue preferred stock with voting and other rights that could adversely affect the voting power of the holders of common stock.

The provisions authorizing our board of directors to issue preferred stock without stockholder approval and the issuance of such stock could have the effect of delaying, deferring or preventing a change in our control or the removal of our existing management.

Provisions of Our Articles of Incorporation Relating to Related-Party Transactions and Corporate Opportunities with DISH Network Corporation

In order to address potential conflicts of interest between us and DISH Network Corporation (“DISH”), our Articles contain provisions regulating and defining the conduct of our affairs as they may involve DISH and its officers and directors, and our powers, rights, duties and liabilities and those of our officers, directors and shareholders in connection with our relationship with DISH. In general, these provisions recognize that we and DISH may engage in the same or similar business activities and lines of business, have an interest in the same areas of corporate opportunities and may have contractual and business relations with each other, including officers and directors or both of DISH serving as our officers or directors or both.

Additionally, if one of our directors or officers learns of a potential transaction or matter that may be a corporate opportunity for both us and DISH, our Articles provide that such director or officer is required to first present the opportunity to us only if (A) we have expressed an interest in such corporate opportunity as determined by our board of directors and evidenced by resolutions appearing in the Company’s minutes; (B) such potential corporate opportunity was expressly offered to such director or officer solely in his or her capacity as a director or officer of the Company or as a director or officer of any of our subsidiaries; and (C) such opportunity relates to a line of business in which we or any of our subsidiaries is then directly engaged.

For purposes of our Articles, “corporate opportunities” include, but are not limited to, business opportunities that we are financially able to undertake, that, from their nature, are in our line of business, are of practical advantage to us and are ones in which we would have an interest or a reasonable expectancy.

The corporate opportunity provisions in our Articles will expire on the date that any person who is a director or officer of us is no longer a director or officer of DISH.

Nevada Law and Limitations on Changes in Control

Nevada Business Combination Statutes

Nevada’s “combinations with interested stockholders” statutes (Nevada Revised Statutes (“NRS”) 78.411 through 78.444, inclusive) prohibit specified types of business “combinations” between certain Nevada corporations and any person deemed to be an “interested stockholder” for two years after such person first becomes an “interested stockholder” unless the corporation’s board of

directors approves the combination (or the transaction by which such person becomes an “interested stockholder”) in advance, or unless the combination is approved by the board of directors and sixty percent of the corporation’s voting power not beneficially owned by the interested stockholder, its affiliates and associates. Further, in the absence of prior approval certain restrictions may apply even after such two-year period. However, these statutes do not apply to any combination of a corporation and an interested stockholder after the expiration of four years after the person first became an interested stockholder.

For purposes of these statutes, an “interested stockholder” is any person who is (A) the beneficial owner, directly or indirectly, of ten percent or more of the voting power of the outstanding voting shares of the Company, or (B) an affiliate or associate of the Company and at any time within the two previous years was the beneficial owner, directly or indirectly, of ten percent or more of the voting power of the then outstanding shares of the Company. The definition of the term “combination” is sufficiently broad to cover most significant transactions between a corporation and an “interested stockholder.”

The provisions of the NRS relating to combinations with interested stockholders could have the effect of delaying, deferring or preventing a change in our control or the removal of our existing management.

Nevada Control Share Acquisition Statutes

Nevada’s “acquisition of controlling interest” statutes (NRS 78.378 through 78.3793, inclusive) contain provisions governing the acquisition of a controlling interest in certain Nevada corporations. These “control share” laws provide generally that any person that acquires a “controlling interest” in certain Nevada corporations may be denied voting rights, unless a majority of the disinterested stockholders of the corporation elects to restore such voting rights. These laws provide that a person acquires a “controlling interest” whenever a person acquires shares of a subject corporation that, but for the application of these provisions of the NRS, would enable that person to exercise (A) one fifth or more, but less than one third, (B) one third or more, but less than a majority or (C) a majority or more, of all of the voting power of the corporation in the election of directors. Once an acquirer crosses one of these thresholds, shares which it acquired in the transaction taking it over the threshold and within the ninety days immediately preceding the date when the acquiring person acquired or offered to acquire a controlling interest become “control shares” to which the voting restrictions described above apply.

The Nevada control share law, if applicable, could have the effect of delaying, deferring or preventing a change in our control or the removal of our existing management.

Directors Duties During a Potential Change in Control

NRS 78.139 also provides that directors may resist a change or potential change in control of the corporation if the board of directors determines that the change or potential change is opposed to or not in the best interest of the corporation upon consideration of any relevant facts, circumstances, contingencies or constituencies pursuant to NRS 78.138(4).

CONTRACT
BETWEEN
ECHOSTAR XXIV L.L.C.
AND
SPACE SYSTEMS/LORAL, LLC
FOR THE
JUPITER 3 SATELLITE PROGRAM

The attached Contract and information contained therein are confidential and proprietary to EchoStar XXIV L.L.C. and Space Systems/Loral, LLC and shall not be published or disclosed to any third party except as permitted by the terms and conditions of this Contract.

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*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

PREAMBLE

This Contract is made as of April 19, 2017 ("Effective Date of Contract" or "EDC") by and between EchoStar XXIV L.L.C., a limited liability company organized and existing under the laws of Colorado, having an office and place of business at 100 Inverness Terrace East, Englewood, CO 80112 USA (hereinafter referred to as "Purchaser" or "Hughes") and Space Systems/Loral, LLC, a limited liability company organized and existing under the laws of Delaware, having an office and place of business at 3825 Fabian Way, Palo Alto, CA 94303 (hereinafter referred to as "Contractor"; Purchaser and Contractor may be referred to in this Contract collectively as the "Parties" or individually as a "Party") regarding the Jupiter 3 Satellite program.

RECITALS

WHEREAS, among other things, Purchaser desires to procure one (1) communications satellite, to be known as "Jupiter 3," to be delivered *** Deliverable Data, Launch Support Services, Mission Operations Support Services, Support and Training Services, Risk Management Services, a Dynamic Satellite Simulator, as defined herein, and other associated support and training services, to the extent and subject to the terms and conditions set forth herein; and

WHEREAS, among other things, Contractor is willing to furnish such Satellite, Deliverable Data, Launch Support Services, Mission Operations Support Services, Support and Training Services, Risk Management Services, a Dynamic Satellite Simulator and other associated support and training services, to the extent and subject to the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the Firm Fixed Price and other valid consideration, the receipt and sufficiency of which is hereby acknowledged, and the mutual covenants and agreements contained herein and intending to be legally bound, the Parties hereto agree as follows:

1. DEFINITIONS

Capitalized terms used and not otherwise defined herein shall have the following meanings:

- 1.1 **"Acceptance" or "Accepted"** (i) with respect to the Satellite shall be as provided in Article 12; and (ii) with respect to any Deliverable Item other than the Satellite shall be as provided in Article 13.
- 1.2 **"Additional Satellite"** has the meaning set forth in Article 27.2.
- 1.3 **"Additional Storage Period"** has the meaning set forth in Article 32.7.2.
- 1.4 **"Affiliate"** means, with respect to a Party, any person or entity directly or indirectly controlling, controlled by or under common control with such Party.
- 1.5 **"Article"** means an article of this Contract.

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

- 1.6 **“Attachment(s)”** means any and all attachment(s) that are attached to this Contract or to any Exhibit and incorporated in this Contract or any Exhibit by reference in their entirety, as may be amended from time to time in accordance with the terms hereof.
- 1.7 **“Attributable to Purchaser”** means an event or occurrence solely caused by an act or omission of Purchaser or Purchaser’s representatives, consultants or subcontractors unless such act or omission was performed in accordance with direction or instruction provided by Contractor.
- 1.8 **“Business Day”** means any day other than a Saturday, Sunday or any other day on which national banks are authorized to be closed in New York City, New York.
- 1.9 **“Candidate Launch Vehicles”** means the following launch vehicles: ***
- 1.10 **“Change of Control”** means: (i) the transfer (in one transaction or a series of related transactions) of all or substantially all of the assets of Contractor to any individual, entity or group (here and hereinafter, as such term is used in Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934, as amended); (ii) the liquidation or dissolution of Contractor or the adoption of a plan by the stockholders of Contractor relating to the dissolution or liquidation of the Contractor; (iii) the acquisition by any individual, entity or group, directly or indirectly, of the power to direct the management and policies of Contractor whether through the ownership of voting securities, by contract or otherwise; or (iv) the acquisition by any individual, entity or group of beneficial ownership, directly or indirectly, of more than *** of the voting power of the total outstanding voting stock of Contractor or any Affiliate that controls Contractor.
- 1.11 ***
- 1.12 ***
- 1.13 **“Component”** means each unit, system and subsystem of the Satellite and all other Satellite hardware and software required to be provided by Contractor hereunder.
- 1.14 **“Contract”** means the articles of this executed contract and all exhibits and attachments hereto, which are hereby incorporated by reference in their entirety, as any of the foregoing may be amended from time to time in accordance with the terms and conditions hereof.
- 1.15 **“Contractor”** has the meaning set forth in the Preamble and includes any of the Contractor’s successors or assignees permitted hereunder.
- 1.16 **“Cure Letter”** has the meaning set forth in Article 9.8.
- 1.17 **“Defect”** means (i) with respect to the Satellite or Deliverable Items of Hardware other than the Satellite, any defect or nonconformance in design, material or workmanship, or failure to meet or perform in accordance with the applicable specification of this Contract; or (ii) with respect to any Deliverable Services, any failure to meet the applicable specification or requirements set forth in this Contract in Article 16.4.

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- 1.18 **“Deliverable Data”** means the data and documentation required to be Delivered to Purchaser as specified in the Statement of Work. In the event that Purchaser terminates this Contract for Contractor’s default pursuant to Article 22, or in the event of a termination by Contractor under Article 22.5 that is determined to have been wrongful, the definition of “Deliverable Data” shall be expanded to include copies (machine readable and hard copy) of: (i) all source code, object code and VHDL code owned by Contractor; and (ii) all other source code, object code and VHDL code for which Contractor has the ability to grant a royalty-free license, that in each case is necessary or useful to support the remaining design, manufacturing, testing and delivery of the Satellite and the Launch and in-orbit operation of the Satellite.
- 1.19 **“Deliverable Item”** means any of the items listed in Article 3.1 and any Additional Satellites, Replacement Satellites or other items ordered by Purchaser pursuant to Article 27 and, collectively, the **“Deliverable Items”**.
- 1.20 **“Delivery”** or **“Deliver”** or **“Delivered”** (i) with respect to the Satellite, has the meaning provided in Article 11; and (ii) with respect to any Deliverable Item other than the Satellite has the meaning provided in Article 11.
- 1.21 **“Designated Orbital Location”** means the geostationary orbital slot at 95.2° west longitude.
- 1.22 **“DSS Performance Specification”** means the dynamic satellite simulator’s performance specification attached as Exhibit F, as such Exhibit may be amended from time to time in accordance with the terms of this Contract.
- 1.23 **“Effective Date of Contract”** or **“EDC”** has the meaning set forth in the Preamble.
- 1.24 ***
- 1.25 **“Exhibit(s)”** means the exhibit(s) identified in Article 2.1 and attached hereto and incorporated in this Contract by reference in their entirety, as may be amended from time to time in accordance with the terms hereof.
- 1.26 **“FCC”** means the U.S. Federal Communications Commission.
- 1.27 **“Firm Fixed Price”** or **“FFP”** has the meaning set forth in Article 4.
- 1.28 **“Force Majeure”** has the meaning set forth in Article 23.1.
- 1.29 ***
- 1.30 **“Ground Insurance”** has the meaning set forth in Article 28.2.1.

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- 1.31 **“Ground Storage”** means that period where the Satellite is held in storage on the ground at a Contractor controlled facility for an extended period after completion of SPSR and prior to Launch.
- 1.32 ***
- 1.33 ***
- 1.34 ***
- 1.35 ***
- 1.36 ***
- 1.37 ***
- 1.38 *** means, with respect to the Satellite, the period commencing at 12:01 a.m. Greenwich Mean Time on the day following the IOT Complete Date for the Satellite and ending on the last day of the Satellite Stated Life.
- 1.39 **“Intellectual Property”** has the meaning set forth in Article 24.1.
- 1.40 **“Intellectual Property Claim”** has the meaning set forth in Article 19.1.
- 1.41 ***
- 1.42 **“In-Orbit Testing”** or **“IOT”** means the testing of the Satellite in-orbit in accordance with the Satellite Test Plan.
- 1.43 **“Intentional Ignition”** means, with respect to the Satellite, ***. This definition shall be replaced by the definition of “Intentional Ignition” in the Launch Services Agreement applicable to Launch of the Satellite and/or any launch insurance policy placed by the Purchaser.
- 1.44 **“IOT Review”** or **“IOTR”** has the meaning set forth in the Statement of Work.
- 1.45 **“IOT Complete Date”** has the meaning set forth in Article 12.3.
- 1.46 **“Joint Intellectual Property”** has the meaning set forth in Article 24.3.
- 1.47 ***
- 1.48 **“Key Personnel”** has the meaning set forth in Article 34.
- 1.49 ***
- 1.50 **“Launch Agency”** means the provider ultimately responsible for conducting the Launch Services for the Satellite.

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

- 1.51 **“Launch Services”** means those services provided by the Launch Agency pursuant to the Launch Services Agreement.
- 1.52 **“Launch Services Agreement”** or **“LSA”** means the contract between Purchaser, or an Affiliate of Purchaser, and the Launch Agency, which provides for Launch Services for the Satellite, as such contract may be amended from time to time in accordance with its terms.
- 1.53 **“Launch Site”** means the location that will be used by the Launch Agency for purposes of launching the Satellite. This definition will be replaced by the definition of “Launch Site” from the Launch Service Agreement applicable to the Launch of the Satellite.
- 1.54 **“Launch Support”** or **“Launch Support Services”** means those services specified in the Statement of Work to be provided by Contractor in support of Launch.
- 1.55 **“Launch Vehicle”** means the launch vehicle selected by Purchaser and used for Launch of the Satellite.
- 1.56 **“LIBOR”** means the rate of interest per annum, at any relevant time, at which thirty (30) day U.S. dollar deposits are offered at such time in the London interbank market. LIBOR for any calendar week (through and including Sunday of such week) shall be at the applicable LIBOR rate set forth in the Wall Street Journal (and if a range the average of such range) on the first Business Day of such week and shall remain the rate used in this Contract as LIBOR until the first Business Day of the following week. In the event the Wall Street Journal does not publish such a rate, the Party to whom an amount is owed shall select a reputable alternate source, as determined in such Party’s reasonable judgment, from which LIBOR shall be ascertained and used under this Contract.
- 1.57 **“Losses”** has the meaning set forth in Article 20.1.1.
- 1.58 **“Major Subcontract”** and **“Major Subcontractors”** have the meaning set forth in Article 33.1.
- 1.59 **“Milestone”** means a portion of the Work upon completion of which a payment is to be made in accordance with Exhibit E.
- 1.60 **“Mission Assurance Plan”** means the mission assurance plan attached as Exhibit C, as such Exhibit may be amended from time to time in accordance with the terms of this Contract.
- 1.61 **“Mission Operations Support Services”** means the orbit-raising, IOT and related services specified in the Statement of Work to be performed by Contractor for the Satellite.
- 1.62 ***
- 1.63 ***
- 1.64 **“NSP”** means not separately priced.

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- 1.65 **“Partial Loss”** means, with respect to the Satellite on or after Intentional Ignition, that Transponder Failure(s) have occurred, but the Satellite is not a Total Loss.
- 1.66 **“Party”** or **“Parties”** has the meaning set forth in the Preamble.
- 1.67 **“Payment Plan”** means the payment plan, as set forth in Exhibit E, as may be amended from time to time in accordance with the terms of this Contract.
- 1.68 **“Performance Specification”** means either the Satellite Performance Specification or the DSS Performance Specification.
- 1.69 ***
- 1.70 **“PMO”** means the Purchaser’s program management office.
- 1.71 **“Proprietary Information”** has the meaning set forth in Article 25.1.
- 1.72 **“Purchaser”** or **“Hughes”** has the meaning set forth in the Preamble and includes any of the Purchaser’s successors or assignees permitted hereunder.
- 1.73 **“Purchaser Associate(s)”** means Purchaser’s Affiliates and Purchaser’s and its Affiliates’ duly appointed consultants, agents and representatives (who are not Competitor of Contractor).
- 1.74 **“Purpose of IOT Review”** has the meaning set forth in Article 12.3.
- 1.75 **“Raw Materials, Work-in-Process and Finished Goods”** means (i) the Satellite; (ii) all Components; (iii) all Deliverable Items; and (iv) all rights in Intellectual Property, Proprietary Information and other data and information that are to be and/or actually are delivered to Purchaser under this Contract. The foregoing shall constitute “Raw Materials, Work-in-Process and Finished Goods” as the same shall be in the process of performance, manufacture, assembly, integration, testing, delivery or completion at any given point in time, whether raw materials, work in process or finished goods, whether now owned or after-acquired and whether now existing or hereafter coming into existence; but, in each case, only to the extent identified to this Contract, which shall be deemed to occur only when such goods have been installed on the Satellite or designated for the Satellite. Contractor shall install goods on the Satellite and designate goods for the Satellite in a manner consistent with Contractor’s customary practices. In furtherance and without limitation of the foregoing, such installation and designation shall be performed and administered by Contractor on a non-discriminatory basis as compared to the other satellites that Contractor is building.
- 1.76 **“Replacement Satellite”** has the meaning set forth in Article 27.1.1.
- 1.77 **“Required SPSR Complete Date”** means *** prior to the date scheduled for the Satellite Delivery in Article 3.1.

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- 1.78 **“Risk Management Services”** means the risk management services to be provided by Contractor in accordance with the Statement of Work and Article 28.
- 1.79 **“Satellite”** means a communications satellite that is to be manufactured by Contractor pursuant to this Contract.
- 1.80 **“Satellite Anomaly”** means, with respect to the Satellite following Launch, a condition or occurrence that has or may have a material adverse impact on the Satellite Stated Life or performance of such Satellite.
- 1.81 **“Satellite Performance Specification”** or **“Specification”** means the Satellite performance specification attached as Exhibit B, as such Exhibit may be amended from time to time in accordance with the terms of this Contract.
- 1.82 **“Satellite Pre-Shipment Review”** or **“SPSR”** has the meaning set forth in Article 9.1.
- 1.83 **“Satellite Replacement Option”** has the meaning set forth in Article 27.1.1.
- 1.84 **“Satellite Replacement Option Exercise”** has the meaning set forth in Article 27.1.1.
- 1.85 **“Satellite Stated Life”** or **“Mission Life”** means *** from completion of the IOT Review.
- 1.86 **“Satellite Test Plan”** means the satellite test plan attached as Exhibit D, as such Exhibit may be amended from time to time in accordance with the terms of this Contract.
- 1.87 **“SCF”** means satellite control facility that performs TT&C for the Satellite.
- 1.88 ***
- 1.89 ***
- 1.90 **“SPSR Complete Date”** has the meaning set forth in Article 9.6.
- 1.91 **“Statement of Work”** or **“SOW”** means the statement of work attached as Exhibit A, as such Exhibit may be amended from time to time in accordance with the terms of this Contract.
- 1.92 ***
- 1.93 **“Subcontract”** means a contract or purchase order awarded by Contractor to a Subcontractor or a contract or purchase order awarded by a Subcontractor at any tier for performance of any Work.
- 1.94 **“Subcontractor”** means any person or business entity that has been awarded a Subcontract.
- 1.95 **“Technical Data and Information”** has the meaning set forth in Article 24.1.

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- 1.96 **“Terminated Ignition”** means, with respect to the Satellite, ***. This definition will be replaced by the equivalent definition from the Launch Service Agreement applicable to the “Launch” of the Satellite and/or any launch insurance policy placed by the Purchaser.
- 1.97 **“Termination Default”** has the meaning set forth in ***
- 1.98 **“Test Bed”** means the equipment to be supplied by Contractor (if Purchaser exercises the Test Bed Option) in accordance with Section 9.0 of Exhibit A and meeting the technical requirements set forth in Appendix E.1 to Exhibit B.
- 1.99 **“Test Bed Option”** has the meaning set forth in Article 27.3.
- 1.100 **“Total Loss”** means with respect to the Satellite on or after Launch: (i) the complete loss, destruction or failure of such Satellite; or (ii) as defined in Purchaser’s insurance policy regarding risks relating to the Launch and/or in-orbit operation of the Satellite in place at the time of Launch (if any) if defined differently therein.
- 1.101 **“Training Services”** means the training to be provided by Contractor in accordance with the Statement of Work.
- 1.102 **“Transaction Document”** has the meaning set forth in Article 5.6.
- 1.103 **“Transponder”** means the equipment ***
- 1.104 **“Transponder Failure”** means the failure of a Transponder, for reasons not Attributable to Purchaser, at any time to meet any of the following requirements of Exhibit B, Satellite Performance Specification:
- 11.104.1 ***, as set forth in Exhibit B, Satellite Performance Specification;
- 11.104.2 *** as set forth in Exhibit B, Satellite Performance Specification, under all operating conditions ***
- 11.104.3 *** as set forth in Exhibit B, Satellite Performance Specification; or
- 11.104.4 *** as set forth in Exhibit B, Satellite Performance Specification.
- ***
- 1.105 **“TT&C”** means telemetry, tracking and control.
- 1.106 **“UCC”** means the Uniform Commercial Code of the State of New York or, ***, the State of Delaware, in either case as in effect from time to time.
- 1.107 ***
- 1.108 **“Work”** means all design, development, construction, manufacturing, labor and services, including without limitation tests to be performed and any and all Deliverable Items, including without limitation the Satellite, Deliverable Data, Launch Support Services, Mission Operations Support Services, Support and Training Services, Risk Management

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Services, a Dynamic Satellite Simulator, shipment and transportation of the Satellite to *** transit insurance and such other insurance as is required by Article 28 and equipment, materials, articles, matters, services and things to be furnished and rights to be transferred to Purchaser under this Contract.

2. SCOPE OF WORK

2.1 Provision of Services and Materials.

Contractor shall provide Purchaser with the Deliverable Items complete in all respects in accordance with the provisions of this Contract. Without limiting the generality of the foregoing, Contractor shall provide the necessary personnel, material, services and facilities to perform the Work, including without limitation to design, manufacture, test, ship the Satellite to *** provide Launch Support Services for, and Deliver to Purchaser the Satellite, together with all other Deliverable Items referred to in Article 3.1, in accordance with the provisions of this Contract, including without limitation, the following Exhibits, which are attached hereto and incorporated in this Contract by reference in their entirety:

- (i) Exhibit A, Statement of Work, dated April 19, 2017;
- (ii) Exhibit B, Satellite Performance Specification, dated April 19, 2017;
- (iii) Exhibit C, Mission Assurance Plan, dated April 19, 2017;
- (iv) Exhibit D, Satellite Test Plan, dated April 19, 2017;
- (v) Exhibit E, Payment Plan, dated April 19, 2017;
- (vi) Exhibit F, Dynamic Satellite Simulator Performance Specification, dated April 19, 2017; and
- (vii) ***

2.2 Satellite Configuration.

The parties agree that requirements and elements of the satellite design specified in *** Exhibit A, Statement of Work, ***

3. DELIVERABLE ITEMS AND DELIVERY SCHEDULE

3.1 Deliverable Items.

Subject to the other terms and conditions of this Contract, the items to be Delivered under this Contract are specified in the table below. Contractor shall Deliver such Deliverable Items on or before the corresponding Delivery schedules and at locations as follows:

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

Item	Description	Delivery Schedule	Delivery Location
1.	Satellite	***	***
2.	Deliverable Data	Per Exhibit A, SOW	Contractor-designated web site
3.	Support and Training Services	Per Exhibit A, SOW	Contractor's facilities and Purchaser's SCF
4.	Launch Support Services	Per Exhibit A, SOW	Per Exhibit A, SOW
5.	Mission Operations Support Services	Per Exhibit A, SOW	Per Exhibit A, SOW
6.	Risk Management Services	Per Exhibit A, SOW and Article 28	Contractor's facilities and per Exhibit A, SOW
7.	Dynamic Satellite Simulator	Per Exhibit A, SOW	Purchaser's SCF or Purchaser designated facility
8.	Scale Models	Per Exhibit A, SOW	PMO

Delivery of the Satellite shall be as set forth in Article 11.

* In addition, subject to Article 14, the Satellite shall ***

3.2 Avoidance and Mitigation of Delays.

As provided in Exhibit A, Statement of Work and the Program Management Plan, Contractor shall notify Purchaser promptly by telephone and confirm in writing any event, circumstance or development that will likely result in a non-conformance of the Delivery schedules and *** established hereunder. ***

4. PRICE

The total price to be paid by Purchaser to Contractor for the Deliverable Items 1 through 8 set forth in Article 3.1 within the scope of work detailed in the Statement of Work, shall be a firm fixed price of *** (the "Firm Fixed Price" or "FFP"). The prices for those Deliverable Items subject to an option under this Contract, if any, are described in the particular Articles that set forth those options.

Except as otherwise expressly provided in this Contract, the Firm Fixed Price is not subject to any escalation or to any adjustment or revision. The Firm Fixed Price stated above includes all fees, charges, expenses, costs and other amounts payable by Purchaser to Contractor for the Work, including without limitation the design, manufacturing, tests, ***, Deliverable Data, Support and Training Services, ***, Launch Support Services, Mission Operations Support Services, a Dynamic Satellite Simulator, Risk Management Services, scale models, shipment and transportation of the Satellite to *** transit insurance and such other insurance as is required by Article 28 (but does not include Launch Services, or any insurance coverage for loss or damage to the Satellite from and after Launch), all in accordance with the terms and conditions of this Contract, as specified herein. ***

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

5. PAYMENT TERMS

5.1 Payment Plan.

Absent a bona fide dispute, payments by Purchaser to Contractor of the Firm Fixed Price set forth in Article 4 and of the amounts for options, if any, exercised by Purchaser pursuant to this Contract, shall be in accordance with Exhibit E, Payment Plan.

5.2 Payment Conditions.

5.2.1 Milestone Payments. Absent a bona fide dispute, each Milestone payment specified in Exhibit E, Payment Plan, shall in each case become payable upon Contractor's completion of each Milestone in accordance with the Contract and satisfaction of the criteria for Milestone completion set forth in the Reference column of Table 6.1 of Exhibit A, after which Contractor shall submit an invoice for payment. *** Contractor's invoice for any payment due from Purchaser upon the completion of a Milestone described in Exhibit E, Payment Plan, shall be accompanied by (i) a certification that the Milestone has been completed in accordance with the requirements of this Contract, and (ii) the necessary or appropriate supporting data and documentation as required hereunder, if any, or as Purchaser may reasonably request within *** after receipt of invoice. Purchaser shall pay in full such invoice (or, if applicable, the undisputed portion thereof) within *** after receipt of the required invoice, certification and (as applicable) data and documentation.

5.2.2 Non-Warranty Payments. Absent a bona fide dispute, all amounts payable to Contractor with respect to non-warranty work performed pursuant to Article 16.3 shall be paid no later than *** after submission of an invoice by Contractor certifying that such non-warranty work has been completed.

5.3 Late Payment.

Except in the case of a bona fide dispute in the event that any payment owed by one Party to the other Party is not made when due hereunder, without prejudice to the second Party's other rights and remedies under this Contract, at law or in equity, the first Party shall pay the other Party interest at the rate of LIBOR plus ***, on the unpaid balance thereof beginning on the day that such payment becomes delinquent until such time as payment is made. In the event that a payment due to Contractor from Purchaser is not made ***. In such case, if Contractor subsequently resumes performance in lieu of termination pursuant to Article 22.5, and such prior cessation causes an increase or decrease in the cost of, or the time required for the performance of this Contract, then *** or any or all, as applicable, and this Contract shall be modified in writing in accordance with and subject to Article 18 ***. Notwithstanding the foregoing, in the event of a bona fide dispute between the Parties regarding a payment due hereunder, then such dispute shall be resolved pursuant to Article 29, ***.

5.4 Invoices.

Invoices required to be delivered by Contractor hereunder shall be submitted to Purchaser (original plus one (1) copy) at the following address:

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

EchoStar XXIV L.L.C.
c/o Hughes Network Systems, LLC
11717 Exploration Lane
Germantown, Maryland 20876

or to such other address as Purchaser may specify in writing to Contractor.

5.5 Payment Bank.

All payments made to Contractor hereunder shall be in U.S. currency and shall be made by electronic funds transfer to the following account:

or by check to:

Space Systems/Loral, LLC
3825 Fabian Way
Palo Alto, CA 94303-4604

or to such other account or address as Contractor may specify in writing to Purchaser.

5.6 ***

5.7 Audit Rights and Procedures.

Contractor shall keep complete, true and accurate books of account and records pursuant to its standard accounting system for the purpose of showing the derivation of all costs where any payments to be made by Purchaser are based on costs (including without limitation termination charges pursuant to Articles 21, 22 and 23 and changes pursuant to Article 18). Contractor will keep such books and records at Contractor's principal place of business ***. Purchaser may direct an audit of any costs claimed by Contractor pursuant to this Contract to be performed by an independent auditor reasonably acceptable to Purchaser and Contractor. *** The independent auditor will be directed to report reasons for its findings and the independent auditor's findings will be binding upon Purchaser and Contractor, ***.

6. PURCHASER FURNISHED ITEMS

6.1 Purchaser-Furnished Support.

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

To enable Contractor to perform Launch Support and Mission Operations Support Services, Purchaser shall timely make available to Contractor the Purchaser-furnished equipment, facilities, and services described in the Statement of Work. Such equipment, facilities and services shall be in good working condition and adequate for the required purpose and shall be made available free of charge for Contractor's use during the period commencing *** prior to Launch and continuing through completion of the IOT Review. Purchaser and Contractor will conduct an interface meeting approximately *** prior to Launch to confirm the availability and adequacy of Purchaser-furnished equipment, facilities, and services.

6.2 Communications Authorizations.

Consistent with industry standards, Contractor shall, ***, provide all cooperation, assistance, and active support reasonably necessary in support of Purchaser's preparation, coordination and filing of applications, registrations, reports, licenses, permits, technical filings, and authorizations with the FCC or other U.S. or foreign governmental agencies having jurisdiction over Purchaser for the Launch and in-orbit operation of the Satellite and the operation of any earth stations or gateways to be used by Purchaser with the Satellite. *** For the avoidance of doubt, Contractor shall have no obligation under this Contract to obtain or maintain any such registrations, licenses, permits, or authorizations with the FCC or any other U.S. or foreign governmental agency having jurisdiction over Purchaser for the Launch and/or in-orbit operation of the Satellite and/or the operation of any earth stations or gateways to be used by Purchaser with the Satellite.

6.3 Radio Frequency Coordination.

Consistent with industry standards, Contractor shall, ***, provide all cooperation, assistance, and active support reasonably necessary in support of Purchaser's efforts in the preparation and submission of all filings required by the International Telecommunication Union (or any successor agency thereto) and all relevant communications regulatory authorities regarding radio frequency and orbital position coordination having jurisdiction over Purchaser. For the avoidance of doubt, Contractor shall have no obligation under this Contract to prepare or submit any such filings to the International Telecommunication Union (or any successor agency thereto) or any relevant communications regulatory authorities regarding radio frequency or orbital position coordination having jurisdiction over Purchaser.

6.4 Licenses and Permits.

Except as set forth in Articles 6.2 and 6.3, Contractor shall be responsible, *** for securing and maintaining any and all permits and licenses for the: (i) construction; and/or (ii) transportation to *** of the Satellite (other than FCC construction permits for the Satellite), including without limitation any required export authorizations, which Contractor shall be responsible for obtaining and maintaining as provided in Article 7.3. In the event Purchaser terminates this Contract as permitted under Article 22, or in the event of a termination by Contractor under Article 22.5 that is determined to have been wrongful, and Purchaser desires to complete the construction of the Satellite, then all such permits and licenses acquired by Contractor shall be assigned, *** to Purchaser or its successor or assigns, to the maximum extent permitted by law. The provisions of this Article 6.4 shall survive and remain in full force and effect, notwithstanding the expiration or termination of this Contract.

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6.5 Satellite Performance Data.

In the event of a Satellite Anomaly, Purchaser shall timely provide Contractor with or give Contractor access to any data which Purchaser has in its possession or has the right to disclose and which Contractor may reasonably require to investigate or correct (if Contractor is able to do so) such Satellite Anomaly. For purposes of this Article 6.5, Purchaser shall use reasonable best efforts to obtain the right to disclose any such data.

6.6 Late Delivery of Purchaser-Furnished Support.

The late delivery of Purchaser-furnished equipment, facilities or services, individually or combined, shall be considered an event beyond the reasonable control of Contractor, and in the event that such a late delivery causes an increase or decrease in the cost of, or the time required for the performance of this Contract, *** and this Contract shall be modified in writing in accordance with and subject to Article 18, provided that: ***

6.7 Launch Services.

6.7.1 Selection of Launch Vehicle. Purchaser shall be responsible for the provision of Launch Services for the Satellite. Contractor shall provide engineering and other customary services pursuant to Exhibit A to maintain compatibility of the Satellite for Launch with the list of Candidate Launch Vehicles. *** Purchaser shall notify Contractor in writing of its down-selection to the *** Candidate Launch Vehicles. At all times prior to the Final Launch Vehicle Selection Date, Contractor shall to maintain Satellite compatibility with Launch on both of the *** Candidate Launch Vehicles and shall provide customary launch vehicle integration activities for both of the *** Candidate Launch Vehicles in support of the then-currently scheduled Launch date. In the event there are *** Purchaser does not notify Contractor of its down-selection to *** Candidate Launch Vehicles on or before *** or changes its selection of either of the *** Candidate Launch Vehicles after *** and such failure or change causes an increase or decrease in costs of, or the time required for, the performance of this Contract, *** and this Contract shall be modified in writing in accordance with and subject to Article 18. *** For the avoidance of doubt, in the event that Purchaser notifies Contractor of its down-selection to *** Candidate Launch Vehicles on or before ***, then notwithstanding anything to the contrary set forth herein, ***

6.7.2 Final Launch Vehicle Selection. On or before *** prior to the later of: *** Purchaser shall notify Contractor in writing of its final selection of a Launch Vehicle for the Launch of the Satellite from the *** Candidate Launch Vehicles, and shall use reasonable commercial efforts to select a Launch date compatible with Contractor's then-currently scheduled Satellite Delivery date; provided that in no event shall Purchaser select a Launch date that is earlier than Contractor's then-currently scheduled Satellite Delivery date. In the event Purchaser does not notify Contractor of its final selection of a Launch Vehicle for the Launch of the Satellite on or before *** or changes its final selection of a Launch Vehicle after *** and such failure or subsequent change causes an increase or decrease in costs of, or the time required for, the performance of this Contract, *** and this Contract shall be modified in writing in accordance with and subject to Article 18. For the avoidance of doubt, in the event that Purchaser notifies Contractor of its final selection of a Launch Vehicle for the

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Launch of the Satellite on or before *** then notwithstanding anything to the contrary set forth herein, ***.

6.7.3 ***

6.7.4 Launch Support. Contractor shall provide all reasonably necessary assistance to, and shall communicate and cooperate with, the Launch Agency so as to support the successful, on-time completion of the Work and integration of the Satellite with the Launch Vehicle and the provision of the Launch Support Services in accordance with the terms of this Contract. Purchaser shall provide all reasonably necessary assistance to Contractor so as to ensure Contractor and any affected Subcontractors have the necessary access and information from the Launch Agency to perform as specified. *** All communications of Contractor and its Subcontractors with the Launch Agency are subject to any required export authorizations, which Contractor shall be responsible for obtaining and maintaining as provided in Article 7.3.

6.8 Consignment.

All Purchaser-furnished equipment and facilities provided to Contractor hereunder as specified in the Statement of Work shall remain the property of Purchaser, and Contractor shall not sell, assign, or otherwise encumber such Purchaser-furnished equipment and facilities. ***

7. COMPLIANCE WITH LAWS; EXPORT LICENSES

7.1 General.

Each Party shall, at its expense, perform its obligations hereunder in accordance with all applicable laws, regulations, and policies of the United States and the conditions of all applicable United States government approvals, permits, or licenses.

7.2 Compliance with U.S. Laws.

Any obligation of Contractor hereunder to provide hardware, software, Deliverable Data, other technical information, technical services, Training Services, or any access to facilities to Purchaser and its personnel and/or its representatives and Purchaser Associates shall be subject to applicable government (including, but not limited to the U.S. Government) laws, regulations, policies and license conditions/provisos (including, but not limited to those related to export controls, economic sanctions and security). Any obligation of Purchaser hereunder, including the provision of Purchaser furnished equipment, facilities, and services items or any access to facilities of Contractor by its personnel and/or its representatives, shall be subject to applicable government (including, but not limited to the U.S. Government) laws, regulations, policies and license conditions/provisos (including, but not limited to those related to export controls, economic sanctions and security). The Parties shall work cooperatively and in good faith to implement this Contract in compliance with such laws, regulations, policies and license conditions. If and to the extent required by U.S. law, Contractor and Purchaser (and if applicable, each Affiliate and each Purchaser Associate) and its personnel and/or representatives shall enter into U.S. Government-approved agreement(s), including without limitation a Technical Assistance Agreement(s), separate from this Contract,

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governing Contractor's provision of hardware, software, Deliverable Data, other technical information, technical services, Training, Launch Support, Mission Operations Support Services or access to facilities in connection with this Contract.

7.3 Licenses and Other Approvals.

Contractor shall use reasonable efforts to obtain and maintain all applicable approvals, permits, and licenses as may be required by any government, foreign or domestic, for the performance of the Work including but not limited to all authorizations required for the import or export of any Deliverable Item, or any part thereof, including but not limited to Delivery of the Satellite and Launch Support equipment that is Contractor's obligation to provide hereunder to *** and transferring title to the Satellite to Purchaser and any agreements and other approvals necessary to perform Launch Vehicle integration activities, Launch Support Services and Mission Operations Support Services, as well as any agreements and other approvals of the U.S. Government that are required for Purchaser, Purchaser Associates and Purchaser's Affiliates and "foreign person" personnel and/or representatives of Purchaser and its Affiliates (including, but not limited to, foreign subsidiaries and related entities of Purchaser involved with the procurement) as well as Purchaser's and its Affiliates' insurance providers, to have access to Contractor facilities, hardware, software, Deliverable Data, Training Services, other technical information or technical services in connection with the performance of this Contract, and shall promptly notify Purchaser of any occurrence or change in circumstances of which it becomes aware that is relevant to or affects such export licenses, agreements and approval. In addition, Contractor shall provide reasonable support to Purchaser and each Purchaser Affiliate in obtaining any necessary approvals, permits, and licenses for the performance of Purchaser's obligations hereunder and any other approvals, permits and licenses Purchaser and/or a Purchaser Affiliate pursues associated with the Satellite and/or any services provided using the Satellite, as well as support all reasonable regulatory efforts of the Purchaser. A "foreign person" shall be as defined in the U.S. International Traffic in Arms Regulations ("ITAR"), 22 C.F.R. §120.16 or as defined under the Export Administration Regulations ("EAR"), 22 C.F.R. Parts 730-774, whichever is applicable. Purchaser (on behalf of itself and Affiliates) shall provide such reasonable cooperation and support as necessary for Contractor to apply for and maintain such required U.S. export licenses, agreements and other approvals, and shall promptly notify Contractor of any occurrence or change in circumstances of which it becomes aware that is relevant to or affects such export licenses, agreements and approvals. Contractor shall review with Purchaser, its Affiliates and Purchaser Associates (and related entities involved with the procurement) any application Contractor makes to any government department, agency or entity for any permit, license, agreement or approval that will be signed by Purchaser as may be required for performance of the Work, prior to submission of such application. Contractor shall provide Purchaser, Purchaser Affiliates and Purchaser Associates a minimum of *** to review such application prior to submission to such governmental entity, and Contractor shall in good faith consider any comments and proposed revisions made by Purchaser for incorporation into such application. Contractor shall include Purchaser, its Affiliates and Purchaser Associates (and related entities involved with the procurement) as a named party(ies) in any application to the U.S. Government for approval of such export licenses, agreements and other approvals so as to permit Purchaser, its Affiliates and Purchaser Associates (and related entities involved with the procurement) to be present during any discussion with or meetings where Purchaser's Affiliates or

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related entities, or insurance providers, may receive from, or discuss with, Contractor any export-controlled items and/or services. Contractor shall provide Purchaser, Purchaser Affiliates and Purchaser Associates copies of the export licenses and agreements, including without limitation any U.S. Government approvals and provisos related to same.

NOTWITHSTANDING ANY PROVISION IN THIS CONTRACT, IN NO EVENT SHALL EITHER PARTY BE OBLIGATED UNDER THIS CONTRACT TO PROVIDE ACCESS TO ITS OR ITS SUBCONTRACTOR FACILITIES, PROVIDE ACCESS TO OR FURNISH HARDWARE, SOFTWARE, DELIVERABLE DATA OR OTHER TECHNICAL INFORMATION, OR PROVIDE TECHNICAL/DEFENSE SERVICES OR TRAINING, TO ANY PERSON EXCEPT IN COMPLIANCE WITH ALL APPLICABLE LAWS, REGULATIONS, POLICIES AND LICENSE CONDITIONS.

7.4 No Unauthorized Exports or Retransfers.

NEITHER PARTY SHALL RE-EXPORT OR RE-TRANSFER TO ANY FOREIGN PERSON THIRD-PARTY ANY HARDWARE, SOFTWARE, DELIVERABLE DATA, OTHER TECHNICAL INFORMATION OR TECHNICAL SERVICES FURNISHED HEREUNDER, EXCEPT AS EXPRESSLY AUTHORIZED BY THE U.S. GOVERNMENT IN ACCORDANCE WITH THE EXPORT LICENSES, AGREEMENTS AND OTHER APPROVALS REFERENCED IN ARTICLES 7.2 AND 7.3 OR AS OTHERWISE EXPRESSLY AUTHORIZED UNDER APPLICABLE LAWS.

8. INSPECTION; ACCESS TO WORK

8.1 Work in Progress at Contractor's Plant.

Subject to Article 7 and Contractor's safety and security procedures to which Contractor, its employees, consultants and agents are also subject, Purchaser personnel and Purchaser Associates shall be allowed access to Work being performed at Contractor's facility for the Satellite and other Deliverable Items, for the purpose of observing the progress of such Work and otherwise confirming Contractor's compliance with this Contract. Notwithstanding anything to the contrary set forth herein, the fact that Purchaser and/or Purchaser Associates has observed Work performed hereunder shall not be deemed Purchaser's acceptance or approval of such Work. Subject to Article 7 and Contractor's safety and security procedures to which Contractor, its employees, consultants and agents are also subject, Purchaser and Purchaser Associates personnel shall have reasonable access, for evaluation, inspection, and use in connection with the planned operation of the Satellite, to (i) Deliverable Data; (ii) work-in-progress and technical and schedule data and documentation relevant to the Work; *** Subject to Article 7, Contractor shall provide Purchaser (and Purchaser Associates identified by Purchaser) access to a program web site (from which Purchaser and any of its authorized Purchaser Associates) will be permitted to download, print, and save documents to serve as a repository for such information and Contractor shall provide a typical site map or index to the contents of that web site. All Purchaser and Purchaser Associates personnel who are "U.S. persons" (as defined under the ITAR or EAR, as applicable) and otherwise meet the requirements for access set forth in this Article ***. For the avoidance of doubt, any communication between

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Purchaser or Purchaser Associates personnel and any foreign Subcontractor shall be conducted through Contractor. Contractor shall obtain and maintain any such authorizations pursuant to Article 7 necessary for any communications between Purchaser or Purchaser Associates personnel and any foreign Subcontractor.

8.2 Work in Progress at Subcontractors' Plants.

Subject to Article 7, to the extent permitted by Contractor's Subcontractors supplying goods or services in connection with the Satellite and other Deliverable Items and subject to each such Subcontractors' reasonable safety and security procedures, Contractor shall allow, or cause its Subcontractors to allow, Purchaser's employees and Purchaser Associates access to Work being performed with respect to the Satellite and other Deliverable Items in each such Subcontractor's plants for the purpose of observing the progress of such Work and otherwise confirming Contractor's compliance with this Contract, subject to the right of Contractor to accompany Purchaser on any such visit to a Subcontractor's plant; ***.

8.3 Remedy for Non-Compliance.

Purchaser may inform Contractor in writing of any particulars in which Purchaser observes that work being performed under this Contract is non-compliant and Contractor shall remedy such non-compliance ***, promptly upon receipt of notice thereof.

8.4 On-Site Facilities for Purchaser's Personnel.

For the purpose of monitoring the progress of the Work to be performed by Contractor hereunder and otherwise confirming Contractor's compliance with this Contract, Contractor shall provide private office facilities at or proximate to Contractor's plant (which private office facilities shall in all cases at least be co-located with Contractor's program management office) *** of Purchaser and Purchaser Associates through a reasonable period of time after the completion of the IOT Review for the last Satellite ordered hereunder. The office facilities to be provided shall include a reasonable amount of private office space, office furniture, local and reasonable long distance telephone service, broadband Internet access, access to copy machines, to the extent necessary to enable such personnel to monitor the progress of Work and otherwise confirm Contractor's compliance with this Contract. Contractor shall use reasonable efforts to provide Purchaser and Purchaser Associates suitable office facilities at the plants of Contractor's Subcontractors where Contractor has been provided with office space.

8.5 Foreign Persons as Purchaser Representatives.

*** shall apply for and, once issued, maintain all U.S. Government export licenses and approvals needed for Purchaser's employees and Purchaser Associates who are "foreign persons" (consistent with the requirements of the International Traffic in Arms Regulations (22 C.F.R. Parts 120-130)), to *** shall cooperate with *** and provide the support necessary for *** to apply for and maintain such export licenses and approvals, and shall promptly notify *** of any occurrence or change in circumstances of which it becomes aware that is relevant to or affects such export license and approvals. *** shall include *** (and related entities involved with the procurement) as a named party(ies) in any application to the U.S. Government for approval of such export licenses, agreements

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and other approvals *** shall provide the parties to such export licenses and agreements copies of the export licenses and agreements, including without limitation any U.S. Government approvals and provisos related to same.

8.6 Meetings and Presentations.

Purchaser shall be entitled to reasonable prior written notice of and to attend (accompanied by Purchaser Associates): (i) all formal program-specific meetings; and (ii) reviews required in Exhibit A, Statement of Work. Purchaser, and any attendant Purchaser Associates, shall have the right to participate in and to make recommendations in all such meetings and reviews at the system, subsystem and unit level. In addition, Contractor and Purchaser shall mutually agree on which informal program-specific meetings to which Purchaser (accompanied by Purchaser Associates) will be invited to attend. Copies of presentations or other documents utilized during these meetings shall be furnished or made available to Purchaser and Purchaser Associates. Purchaser's management personnel and Purchaser Associates, as may be deemed appropriate by Purchaser, shall be invited to the Quarterly Reviews. Contractor shall be represented by its Program Manager and such other personnel as are required to support the particular presentation. Contractor shall provide to Purchaser, upon request, copies of all documentation utilized during and/or a summary of informal program-specific meetings of a material nature for which Contractor cannot provide prior notice and where Purchaser's or Purchaser Associates' personnel are not otherwise aware.

8.7 Interference with Operations.

Purchaser shall exercise its rights under this Article 8 in a manner that does not unreasonably interfere with Contractor's or its Subcontractors' normal business operations or Contractor's performance of its obligations under this Contract or any agreement between Contractor and its Subcontractors.

8.8 Notification.

Notwithstanding any other provision of this Contract, Contractor shall advise Purchaser immediately by telephone and confirm in writing any event, circumstance or development which materially threatens the quality of, or the Delivery schedule *** the Satellite or any Component part thereof, as well as any other Deliverable Items to be provided hereunder.

8.9 Purchaser Inspection Not Acceptance.

The inspection, examination, or observation by Purchaser with regard to any portion of Work produced under this Contract, and Purchaser's or Purchaser Associates' participation in, and comment at, meetings with Contractor, shall not constitute any Acceptance of the Work, nor shall it relieve Contractor from fulfilling its contractual obligations hereunder.

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8.10 Electronically-Generated Information.

With regard to electronically generated information, Contractor will provide Purchaser and Purchaser Associates with an electronic copy thereof and/or electronic access (via the internet or Purchaser e-mail) to information regarding program performance and documentation that will advise Purchaser, on a current basis, of program specific issues, decisions and problems. Contractor shall establish data links between Contractor's and Purchaser's facilities such that ***. Subject to Article 7, ***.

9. SATELLITE PRE-SHIPMENT REVIEW

9.1 Contractor to Conduct a Review of the Satellite Prior to Shipment.

Contractor shall conduct a detailed and comprehensive review of the Satellite with Purchaser (and Purchaser Associates designated by Purchaser) prior to Contractor's shipment of the Satellite to the Launch Site or its entering into storage. This review shall be conducted in accordance with the terms of this Article 9 and Exhibit A, Statement of Work to accomplish the purposes set forth in Article 9.3 (a "Satellite Pre-Shipment Review" or "SPSR").

9.2 Time, Place, and Notice of SPSR.

The SPSR shall take place at Contractor's facility. Contractor shall notify Purchaser in writing on or before *** prior to the date that the Satellite will be available for the SPSR, which shall be the scheduled date for commencement of such SPSR. If Purchaser cannot attend the SPSR on such initially scheduled date, Contractor shall make reasonable efforts to accommodate Purchaser's availability, taking into consideration the requirement to Deliver the Satellite on or before the date set forth in Article 3.1.

9.3 Conduct and Purpose of SPSR.

The SPSR shall be conducted in accordance with the terms of this Article 9 and Exhibit A, Statement of Work. The purpose of the SPSR shall be to: (i) review test data and analyses for the Satellite; (ii) demonstrate testing has been completed in accordance with the applicable portions of Exhibit D, Satellite Test Plan; and (iii) determine whether the Satellite meets applicable Exhibit B, Satellite Performance Specification requirements (except those that have been waived pursuant to Article 9.4 below) and is therefore ready for shipment to ***.

9.4 Waivers and Deviations.

Contractor shall timely submit requests for waivers of, or deviation from, provisions of the Performance Specification applicable to the Satellite or other Deliverable Item or the Satellite Test Plan, and, in the notice provided to Purchaser for scheduling of the SPSR as provided in Article 9.2, Contractor shall include: (i) a summary of waiver and/or deviation requests that have been submitted to Purchaser and which are still pending; and (ii) submittals of any new or additional

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requests for waivers of, or deviation from, provisions of the Performance Specification applicable to the Satellite or other Deliverable Item or the Satellite Test Plan at the time of such notice and for which Contractor desires relief. A request for waiver or deviation shall be deemed granted only if it has been approved in writing by a duly authorized representative of Purchaser. Each such waiver or deviation approved by Purchaser shall be deemed an amendment to the Performance Specification for such Satellite or Deliverable Item or the Satellite Test Plan, permitting such waiver thereof, or deviation therefrom, effective on or after the date of such approval for the Satellite or Deliverable Item. ***

9.5 Purchaser's Inspection Agents.

Purchaser and any Purchaser Associates designated by Purchaser shall, subject to Article 7, be entitled to participate in the SPSR pursuant to this Article 9.

9.6 SPSR Results.

In the event that the SPSR demonstrates that: (i) testing has been performed in accordance with the applicable sections of Exhibit D, Satellite Test Plan (including without limitation, any waivers or deviations approved by Purchaser pursuant to Article 9.4), and (ii) the Satellite conforms to the applicable requirements of Exhibit B, Satellite Performance Specification (including without limitation, any waivers or deviations approved by Purchaser pursuant to Article 9.4), Contractor shall provide written notification to Purchaser of completion of the SPSR. Purchaser, *** shall provide Contractor written notice of either (a) its concurrence with the results of the SPSR (including without limitation any waiver of its right to compel correction of those non-conformances to the requirements of Exhibit B, Satellite Performance Specification, specified by Purchaser in such notice), and the Satellite shall be deemed ready for shipment to *** or to be placed in storage (the date of such notice of concurrence, the "SPSR Complete Date") or (b) its non-concurrence with the results of the SPSR as provided in Article 9.7.

9.7 SPSR Results Find Non-Conformance.

In the event that such SPSR discloses (i) any failure to conduct testing in accordance with the applicable sections of Exhibit D, Satellite Test Plan, or (ii) any non-conformance of such Satellite to the requirements of Exhibit B, Satellite Performance Specification, and such failure or non-conformance has not been resolved by waivers or deviations approved by Purchaser pursuant to Article 9.4, a written notification of non-conformance to Contractor shall state each such non-conformance required to be corrected or repaired (with reference to the relevant provision of Exhibit D, Satellite Test Plan, or Exhibit B, Satellite Performance Specification, deemed not met).

9.8 Repairs or Replacement for Non-Conformance.

In the event that Purchaser provides Contractor with a notice of non-conformance, Contractor shall correct or repair each such Purchaser notified non-conformance promptly and thereafter conduct additional testing and/or a "delta" SPSR, in accordance with the provisions of this Article 9, to the extent necessary to demonstrate that the Satellite has been tested in accordance with Exhibit D, Satellite Test Plan, or conforms to the requirements of Exhibit B, Satellite Performance Specification, after which Contractor shall provide a written notification to Purchaser of completion

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of the supplemental SPSR. Purchaser shall, ***, provide Contractor with written notice of either (i) its concurrence with the results of the supplemental SPSR (including without limitation any waiver of its right to compel correction of those non-conformances to the requirements of Exhibit B, Satellite Performance Specification, specified by Purchaser in such notice), and the Satellite shall be deemed ready for shipment to *** or to be placed in storage, or (ii) its non-concurrence with the results of the supplemental SPSR and Contractor shall be required to repeat the process described in this Article 9.8 until Purchaser provides Contractor with a written notice of its concurrence pursuant to the requirements of this Article 9.

If Purchaser fails to provide written notification required above within the time specified above, *** the Satellite shall be deemed ready for shipment to ***.

Upon receipt of Purchaser's notification in accordance with this Article 9, Contractor shall thereafter transport such Satellite in accordance with Contractor's standard commercial practices to *** and Contractor shall proceed or continue in the performance of the Launch Support Services. Contractor shall not ship the Satellite to *** until all non-conformances are corrected or repaired or have a Purchaser-approved waiver or deviation. Purchaser shall have no obligation to authorize shipment of the Satellite to *** prior to the SPSR Complete Date.

9.9 Inspection Costs ***.

All costs and expenses incurred *** in the exercise of inspection rights under this Article 9, including without limitation ***.

9.10 Correction of Deficiencies after SPSR.

If at any time following the SPSR Complete Date of the Satellite and prior to Launch (or in the event of a Terminated Ignition, prior to any subsequent Launch), it is discovered that the Satellite has a Defect or fails to meet the requirements of Exhibit B, Satellite Performance Specification, as they may be modified as of such time pursuant to Article 9.4, Contractor shall, *** promptly correct such deficiencies prior to Launch (or in the case of a Terminated Ignition, prior to any subsequent Launch) in accordance with the applicable terms of this Contract. Contractor shall use reasonable efforts to avoid and minimize delays associated with any such Defects as further described in Article 3.2. In addition, in the event of a Terminated Ignition, Contractor and Purchaser shall proceed in accordance with Article 15.1.2 for those actions necessary to prepare the Satellite for relaunch.

9.11 Warranty Obligations.

In no event shall Contractor be released from any of its warranty obligations as set forth in Article 16 as a result of any Satellite having successfully passed the pre-shipment inspection set forth in this Article 9.

9.12 Repaired or Replaced Satellite.

Without limitation to the Satellite, the provisions of this Article 9 shall also apply to the corrected, repaired or replaced Satellite.

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10. INFORMATION REGARDING CORRECTIVE MEASURES; OTHER SIMILAR SATELLITES

10.1 Defect in Contractor's Satellites.

If the data from any satellite manufactured by Contractor (whether in-orbit or on the ground) or other information known to Contractor shows that such satellite will not or may not meet the performance specification for such satellite at any time during its mission, then Contractor shall, if applicable to the Satellite, without prejudice to Purchaser's other rights and remedies under this Contract, at law, in equity, or otherwise: (i) promptly notify Purchaser in writing thereof, together with such supporting detail as is known to Contractor and not prohibited by Contractor's obligations of confidentiality to any third-party; *** For the avoidance of doubt, the restriction on providing information that is confidential to any third-party does not relieve Contractor of its obligation to provide Purchaser notice of a Defect or potential Defect as contemplated under this Article 10. ***

10.2 Correction of Defects.

If the data available from any satellite manufactured by Contractor (whether in-orbit or on the ground) or other information known to Contractor shows that the launched Satellite Delivered under this Contract contains *** a Defect or Satellite Anomaly, Contractor shall promptly notify Purchaser in writing and proceed in accordance with Article 16.2.1.

In addition, and without limitation to any other obligations of Contractor, Contractor shall notify Purchaser promptly by telephone and confirm in writing any event, circumstance or development ***. Contractor shall use reasonable best efforts to avoid and/or mitigate the effect of such event, circumstance or development.

11. DELIVERY OF THE SATELLITE AND OTHER DELIVERABLE ITEMS

Delivery of each Deliverable Item, except the Satellite, shall occur upon arrival of such Deliverable Item at the location specified in Article 3.1, after having successfully completed any required reviews, testing and acceptance procedures. In the case of the Satellite, Delivery of the Satellite shall ***.

12. ACCEPTANCE OF THE SATELLITE AND IOT

12.1 Satellite Acceptance

Acceptance of the Satellite by Purchaser shall ***.

12.2 Launch Support and Mission Operations Support Services.

Upon arrival of the Satellite ***, Contractor shall proceed with the provision of Launch Support Services in accordance with Exhibit A, Statement of Work. After Launch of the Satellite by the Launch Agency, Contractor shall proceed with the provision of Mission Operations Support Services in accordance with Exhibit A, Statement of Work.

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12.3 IOT

*** prior to Launch of the Satellite, Contractor shall notify Purchaser of the IOT schedule. Purchaser may observe the IOT at Purchaser's or Contractor's facilities, at Purchaser's election, subject to applicable U.S. Government export restrictions and Contractor's reasonable security restrictions. When, in the reasonable assessment of Contractor, the IOT has been completed for the Satellite, Contractor shall submit the IOT results to Purchaser. Within *** after Contractor provides the certified IOT results to Purchaser with respect to the Satellite, Contractor and Purchaser shall hold the IOT Review. Contractor may elect to conduct from Contractor's facilities the IOT eclipse test set forth in the Satellite Test Plan with respect to the Satellite during the first eclipse season after IOT is otherwise completed. The results of the later IOT eclipse test will be provided to Purchaser for Satellite performance characterization and insurance purposes only. The purpose of the IOT Review is to confirm that: (i) the test program has been completed per Exhibit D, Satellite Test Plan; and (ii) the IOT results are properly documented (items (i) and (ii) being the "Purpose of IOT Review"). Upon written confirmation by Purchaser that the Purpose of IOT Review has been met, *** the IOT Review shall be complete (the date of such written confirmation, the "IOT Complete Date") and handover of the Satellite to the Purchaser shall proceed in accordance with Exhibit A, Statement of Work. Unless Purchaser provides written notice *** of the IOT Review that the Purpose of IOT Review has not been met, IOT Complete Date shall be deemed to have occurred.

12.4 TT&C

In the event that the Satellite experiences a Satellite Anomaly at or after Launch but prior to the point in time when Purchaser actually assumes responsibility for performing telemetry, tracking and control services for the relevant Satellite, then ***.

12.5 Warranty Obligation.

In no event shall Contractor be released from any of its warranty obligations applicable to the Satellite under Article 16 as a result of the Satellite having been Accepted as set forth in this Article 12.

13. ACCEPTANCE INSPECTION FOR DELIVERABLE ITEMS OTHER THAN THE SATELLITE

13.1 Inspection of Deliverable Items of Hardware Other Than The Satellite.

With respect to each Deliverable Item of hardware other than the Satellite, Purchaser shall perform Acceptance inspection within *** after Contractor has notified Purchaser that such Deliverable Item has been Delivered. Such Acceptance inspection shall be conducted in accordance with the procedures described in the Statement of Work. The purpose of the Acceptance inspection shall be to determine whether each such Deliverable Item meets applicable Performance Specification requirements as of the date of such Delivery, as such requirements may have been modified pursuant to Article 13.3.

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13.2 Purchaser's Inspection Agents.

Purchaser may, upon giving prior written notice to Contractor, cause any Purchaser Associate designated by Purchaser to conduct the Acceptance inspection pursuant to this Article 13 in whole or in part; provided, however, that the provisions of Article 7 shall apply to any such Purchaser Associate and such Purchaser Associate shall comply with Contractor's reasonable safety and security regulations provided to Purchaser in writing in advance of such inspection.

13.3 Pending Waivers.

Waivers of or deviations from the Performance Specification applicable to any Deliverable Item subject to Acceptance inspection pursuant to this Article 13 shall be addressed in the same manner as set forth in Article 9.4.

13.4 Acceptance Inspection Results.

Within a reasonable time not to exceed *** after completion of Acceptance inspection pursuant to this Article 13 for any Deliverable Item, Purchaser shall notify Contractor in writing of the results of such Acceptance inspection. In the event that such Acceptance inspection demonstrates conformity of such Deliverable Item to the applicable requirements of the Performance Specification, such Deliverable Item shall be deemed accepted by Purchaser for all purposes hereunder ("Acceptance" or "Accepted" with respect to each such Deliverable Item other than the Satellite). In the event that such Acceptance inspection discloses any non-conformance of such Deliverable Item to the applicable requirements of the Performance Specification, Purchaser's notice shall detail each such non-conformance (with reference to the applicable requirement of the Performance Specification deemed not met) and Contractor shall promptly initiate the correction or repair of such non-conformance and resubmit such Deliverable Item for Acceptance inspection in accordance with this Article 13 as to each such corrected or repaired element.

13.5 Acceptance Inspection: Equipment and Facilities.

Contractor shall make available to Purchaser such equipment and facilities as Purchaser may require to conduct any preshipment inspections. All costs and expenses incurred ***.

13.6 Warranty Obligations.

In no event shall Contractor be released from any of its warranty obligations applicable to any Deliverable Item as a result of such Deliverable Item having been Accepted as set forth in this Article 13.

13.7 Repair or Replace Deliverable Items.

The provisions of this Article 13 shall apply to corrected, repaired or replaced Deliverable Items other than the Satellite.

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13.8 Deliverable Data.

Purchaser shall, within *** of Delivery by Contractor to the location designated in Article 3.1 of Deliverable Data requiring Purchaser approval pursuant to the Statement of Work, notify Contractor in writing that such Deliverable Data has been accepted in accordance with the Statement of Work ("Acceptance" or "Accepted" with respect to each such item of Deliverable Data), or advise Contractor in writing that such Deliverable Data does not comply with the applicable requirements of the Statement of Work, identifying each particular of such non-compliance. Contractor shall promptly correct any non-compliant aspect of such Deliverable Data described in such Notice from Purchaser and re-submit it to Purchaser for inspection pursuant to this Article 13.8.

14. LIQUIDATED DAMAGES ***

14.1 Liquidated Damages.

***	***	***	***
***	***	***	***
***	***	***	***
***	***	***	***

15. TITLE AND RISK OF LOSS

15.1 Satellite.

15.1.1 Passage of Title and Risk of Loss. Except as provided in Articles 22.2, 22.3 and 23.2, and subject to Article ***, title and risk of loss to the Satellite shall pass from Contractor to Purchaser, upon ***.

15.1.2 Terminated Ignition. In the event of a Terminated Ignition, once the launch pad has been declared safe and the Launch Agency authorizes the start of the demating operations, Contractor shall, upon Purchaser's request, immediately take all necessary actions to prepare the Satellite for a relaunch, including without limitation: (i) supporting the Launch Agency in demating the Satellite from the Launch Vehicle and conducting defueling operations; (ii) directly performing inspection and testing, refurbishment, storage, repair and replacement of damaged Component(s) (damaged as a result of the Terminated Ignition or related activities) and transportation of the Satellite to and from the Launch Site; and (iii) providing additional Launch support services for the subsequent Launch of the Satellite. *** Upon Purchaser's request, the Parties shall establish a new due date for the repaired/refurbished Satellite.

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15.1.3 Remedies. ***. CONTRACTOR MAKES NO WARRANTY AS TO THE PERFORMANCE OF ANY LAUNCH VEHICLE. THE FOREGOING SHALL NOT PREJUDICE OR LIMIT EITHER PARTY'S RIGHTS AND OBLIGATIONS WITH RESPECT TO ARTICLE 25, DISCLOSURE AND HANDLING OF PROPRIETARY INFORMATION AND ARTICLE 24, INTELLECTUAL PROPERTY.

15.2 Deliverable Items Other Than The Satellite.

Delivery and risk of loss of, and title to, each Deliverable Item of hardware other than the Satellite shall pass from Contractor to Purchaser upon Acceptance of such Deliverable Item pursuant to Article 13.4. Purchaser's rights in Deliverable Data are as set forth in Article 24.

5.3 Loss, Destruction or Damage of the Satellite ***

In the event of loss, destruction or damage of the Satellite ***

16. WARRANTIES

16.1 Terms and Period of Warranty.

16.1.1 Satellite. ***

16.1.2 Deliverable Items of Hardware Other Than The Satellite. Contractor warrants that each Deliverable Item of hardware other than the Satellite Delivered under this Contract shall be manufactured and will perform in conformity with the Performance Specification (as may be waived pursuant to Article 13.3) applicable to such Deliverable Item in every respect and will be free from Defects ***

16.1.3 Disclaimer. EXCEPT AND TO THE EXTENT PROVIDED IN ARTICLE 16.1 AND ARTICLE 16.4, CONTRACTOR HAS NOT MADE NOR DOES IT HEREBY MAKE ANY REPRESENTATION OR WARRANTY, WHETHER WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF DESIGN, OPERATION, CONDITION, QUALITY, SUITABILITY OR MERCHANTABILITY OR FITNESS FOR USE OR FOR A PARTICULAR PURPOSE, ABSENCE OF LATENT OR OTHER DEFECTS, WHETHER OR NOT DISCOVERABLE, WITH REGARD TO ANY SATELLITE OR ANY OTHER DELIVERABLE ITEM.

16.2 Repair or Replacement.

16.2.1 Satellite Anomalies. Without limiting its obligations under Article 10, Contractor shall investigate any Satellite Anomaly arising during the life of the Satellite, and *** to promptly correct any such anomaly that is correctable by Contractor from Purchaser's SCF using the facilities and equipment available at such site or is otherwise correctable in accordance with the Satellite Anomaly resolution support services set forth in Section 7 of Exhibit A, Statement of Work. Such reasonable efforts shall be conducted *** to resolve Defects or Satellite Anomalies by on-ground means, including software patches or updates, or

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transmission by Contractor of commands to the Satellite to eliminate or mitigate any adverse impact resulting from any such Satellite Anomalies or Defects, to establish work-around solutions, or to otherwise resolve such Defects or Satellite Anomalies. Contractor shall coordinate and consult with Purchaser concerning such on-ground resolution of Defects or Satellite Anomalies in the launched Satellite. If for any reason any such Satellite Anomaly or Defect cannot be or is not corrected as set forth above, and as a result thereof, such Satellite suffers any loss, including loss of Transponders or becomes a Total Loss, ***. In the event and to the extent that the occurrence of a Satellite Anomaly is not attributable to Contractor ***.

16.2.2 Deliverable Items of Hardware Other Than The Satellite. Without prejudice to Purchaser's rights and Contractor's duties and obligations under Articles 4 (solely with respect to Contractor's indemnification obligations), 6 (solely with respect to Contractor's indemnification obligations), 12.4, 12.5, 16 (except as expressly limited therein), 19, 20 and 31.3, during the applicable period specified in Article 16.1.2 for any Deliverable Item of hardware other than the Satellite, ***, any Defect in such Deliverable Item discovered by Purchaser, shall be remedied by Contractor *** by repair or replacement of the defective Component (at Contractor's election). For any such Deliverable Item, Contractor shall determine if repair or replacement is required to be performed at Contractor's plant. If required, Purchaser shall ship to Contractor's designated facility any such Deliverable Item. Contractor shall be responsible, in accordance with its standard commercial practice, *** for any such Deliverable Item once repaired or replaced to Purchaser at the location designated therefor in Article 3.1 ***. Risk of loss for any such Deliverable Item shall transfer to Contractor upon Delivery of such Deliverable Item to the shipping carrier by Purchaser, and risk of loss shall transfer to Purchaser for any such Deliverable Item once repaired or replaced pursuant to this Article 16.2.2 upon receipt thereof by Purchaser at the location designated therefor in Article 3.1. ***

16.3 Use Conditions Not Covered by Warranty.

With respect to Deliverable Items of hardware other than the Satellite, the warranty under this Article 16 shall not apply if adjustment, repair, or parts replacement is required as a result, directly or indirectly, of accident, unusual physical or electrical stress beyond the unit's designed tolerances, negligence, misuse, failure of environmental control prescribed in operations and maintenance manuals, repair or alterations by any party other than Contractor or its agents (unless Contractor or one of its Subcontractors (with the knowledge and consent of Contractor) specifically recommended such repair or alterations), or by causes other than normal and ordinary use. The warranty provided pursuant to this Article 16 is conditioned upon Contractor being given access, if required, to Deliverable Items delivered at Purchaser's facility in order to effect any repair or replacement thereof. ***

16.4 Warranty for Training and Services.

Contractor warrants that the Training Services and other services it provides to Purchaser pursuant to this Contract will conform to reasonable industry standards at the time such Training Services or other services are provided. In the event Contractor breaches this warranty, ***, Contractor shall

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apply reasonable efforts to correct the deficiencies in the provision of such Training Services and other services where it is practicable to do so.

16.5 Software.

In addition to the warranties set forth in Article 16.2.2, ***.

16.6 Subcontractor Warranties.

Contractor shall pass through and assign (and provide copies thereof, no later than Satellite Acceptance) to Purchaser all applicable warranties on goods and services given by Subcontractors to the extent Contractor is permitted by the terms of its purchase contracts with such suppliers or manufacturers and further to the extent that such assignment does not interfere with Contractor's performance of its obligations hereunder. ***

18. CHANGES

18.1 Right to Adjustment.

Purchaser may from time to time, in writing, request a change within the general scope of this Contract in drawings, designs, specification, method of shipment or packing, quantities of items to be furnished, place of Delivery, ***, require work in addition to the Work provided for herein, request the omission of Work or modify the whole of any part of the Work provided for herein.

In the event that such change or other triggering event *** or the time required for the performance of this Contract, *** and this Contract shall be modified in writing accordingly ***. Nothing in this Article 18 shall excuse Contractor from promptly proceeding with this Contract as changed pursuant to this Article 18.1.

18.2 Cost Adjustments.

In the event that Contractor or Purchaser claims a right to adjustment pursuant to Article 18.1 above, Contractor shall prepare and furnish to Purchaser the evidence reasonably necessary to establish the amount of any increase or decrease in the cost of, or the time required for, the performance of this Contract caused by the relevant change order. Subject to Article 18.3 below, the amount of any such cost increase or decrease will be calculated in accordance with Contractor's regularly established accounting practices ***.

18.3 Equitable Adjustment.

The Parties shall attempt to reach agreement as to any equitable adjustment that is appropriate pursuant to Article 18.1 above. Without relieving Contractor of the obligation to proceed promptly with this Contract as changed, in the event that the Parties are unable to reach agreement as to an equitable adjustment, the matter shall be determined in accordance with Article 29. During the

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pendency of such proceedings, Contractor shall proceed with the Work required under this Contract as changed and Purchaser shall pay Contractor all amounts not in dispute.

19. INTELLECTUAL PROPERTY ***

19.2 Infringing Equipment.

If Contractor's performance of the Work or the design or manufacture of any Deliverable Item or any part thereof or the normal intended use, lease or sale or other disposition of any Deliverable Item or any part thereof under this Contract is enjoined as a result of an Intellectual Property Claim or is otherwise prohibited, ***.

19.3 Combinations and Modifications.

Contractor shall have no liability under this Article 19 for any Intellectual Property Claim arising from ***

19.4 ***

For purposes of this Article 19, ***. The Parties agree that *** shall be considered as third-party beneficiaries entitled to enforce this Article 19 directly against Contractor. ***

20. INDEMNIFICATION

20.1 Contractor's Indemnification of Purchaser for Bodily Injury and Property Damage.

20.1.1 Contractor, at its sole cost and expense, shall defend, indemnify and hold harmless Purchaser and its Affiliates and its and their respective directors, officers, employees, shareholders (excluding claims for diminution in share value), agents and representatives, from and against any losses, damages, liabilities, suits and expenses as well as costs and expenses, including without limitation court costs and reasonable attorneys' fees (collectively, "Losses") attributable to third party claims for: (i) death or bodily injury to or damage to the property of such third-party, but only if such Losses were caused by, or resulted from, a negligent act or omission or willful misconduct of Contractor and/or its employees, subcontractors, agents, or representatives at any tier, or any of them; or (ii) any loss of or damage to or destruction of, Purchaser-furnished equipment and facilities while in Contractor's possession or control. For the avoidance of doubt, and except for Losses attributable to third party claims for bodily injury or property damage resulting from the Gross Negligence or willful misconduct of Contractor, Contractor shall have no indemnity obligation under this Article 20.1 for any Losses with respect to the operation or use of the Satellite after Launch, even if such Losses are attributable to an act or omission of Contractor or its employees prior to Launch. *** For purposes of this Article 20.1.1, ***

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20.1.2 Contractor, at its own expense, shall defend, indemnify and hold harmless the Indemnified Companies and their respective shareholders, directors, officers and employees, from and against all Losses in connection with claims arising out of, or relating to, Contractor's breaches of its obligations in Article 4.

20.2 Purchaser's Indemnity.

Purchaser, at its own expense, shall defend, indemnify and hold harmless Contractor, and its Affiliates and its and their respective directors, officers, employees, shareholders (excluding claims for diminution in share value), agents and representatives from and against any Losses for death or bodily injury to or damage to the property of a third-party claimant, but only if such Losses were caused by, or resulted from, negligent acts or omissions or willful misconduct of Purchaser or its employees, agents, subcontractors, consultants or representatives. The term "third parties" shall not be interpreted as including Contractor or any of its directors, officers and employees.

20.3 Conditions to Indemnification.

The right to any indemnity specified in Articles 19, 20.1 and 20.2 shall be subject to the following conditions:

- (i) Purchaser shall be the only party entitled to enforce Articles 19 and 20 on behalf of itself and any of the Indemnified Companies, and the Parties agree that none of the Indemnified Companies shall be considered as third-party beneficiaries entitled to enforce Articles 19 and 20 directly against Contractor. The Party seeking indemnification shall promptly advise the other Party in writing of the filing of any suit or of any written or oral claim upon receipt thereof (provided that any delay in providing such notice to Contractor shall relieve Contractor of its indemnity obligations only to the extent that the delay materially prejudices Contractor with respect to defense of such claim) and shall provide the other Party, at its request and at the Indemnifying Party's expense, with copies of all documentation relevant to such suit or claim;
- (ii) The Party seeking indemnification shall not make any admission nor shall it reach a compromise or settlement without the prior written approval of the other Party, which approval shall not be unreasonably withheld, conditioned or delayed; and
- (iii) The indemnifying Party shall assist and assume, when not contrary to the governing rules of procedure, the defense of any claim or suit in settlement thereof and shall satisfy any judgments rendered by a court of competent jurisdiction in such suits and shall make all settlement payments. The Party seeking indemnification may participate in any defense at its own expense, using counsel reasonably acceptable to the indemnifying Party, provided there is no conflict of interest and that such participation would not adversely affect the conduct of the proceedings.

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20.4 Waiver of Subrogation.

Each Party shall use reasonable efforts without incurring cost or expense to obtain a waiver of subrogation and release of any right of recovery against the other Party and its Affiliates, contractors and subcontractors at any tier (including without limitation suppliers of any kind) and their respective directors, officers, employees, shareholders and agents, that are involved in the performance of this Contract, from any insurer providing coverage for the risks subject to indemnification by the insured Party under this Article 20.

21. TERMINATION FOR CONVENIENCE

21.1 Reimbursement of Contractor.

21.1.1 Purchaser may terminate this Contract without cause, in whole or in part, at any time prior to Launch by giving Contractor written notice of such termination. In the event of such termination, Contractor will immediately cease work as directed in the termination notice. The parties agree that the termination charges pursuant to this Article 21.1 shall be negotiated by the parties, ***

(i) ***

(ii) ***

21.1.2 With respect to inventory items not desired by Purchaser, Contractor shall upon Purchaser's request use its reasonable best efforts to reuse and resell such items, and ***. Title to inventory items not desired by Purchaser that are reused and/or resold by Contractor shall remain with Contractor.

21.1.5 The remedies set forth in this Article 21 shall be *** in the event Purchaser exercises a termination for convenience.

21.2 Partial Termination.

If the termination by Purchaser is partial, the price for the non-terminated portion of this Contract shall be ***, which must be borne by such portion because of the partial termination, ***.

21.3 Title Transfer.

In the event of a termination pursuant to this Article 21, a termination settlement meeting shall be held at a mutually agreed time and place no later than *** after submission of a claim by Contractor pursuant to Article 21.1. At or prior to the date of such termination settlement meeting, Contractor shall provide Purchaser with such documentation *** set forth in Articles 21.1 and 21.2 as Purchaser may reasonably request. Upon mutual agreement of the termination settlement, ***. Upon mutual agreement of the termination settlement, subject to applicable U.S. Government export laws, ***.

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21.4 Minimize Termination Costs.

In the event of termination pursuant to this Article 21, Contractor shall take all actions necessary to *** including without limitation the immediate discontinuance of the terminated Work under this Contract and the placing of no further orders for labor, materials or services required under the terminated portion of this Contract. Contractor agrees to take such action as may be necessary or as Purchaser may direct for protection of property in Contractor's possession in which Purchaser may have acquired an interest.

21.5 Continued Efforts.

Contractor shall continue performance of the portion of this Contract not terminated. Purchaser shall have no obligations to Contractor with respect to the terminated portion of this Contract except as set forth in this Article 21.

22. TERMINATION FOR DEFAULT

22.1 Failure to Perform by Contractor.

Subject to Article 22.4, and other than as a result of (a) a Force Majeure event, or (b) any cause or causes Attributable to Purchaser, if: *** Contractor does not cure, or provide a cure plan and make substantial progress towards curing, such failure within *** after receipt from Purchaser of written notice of such failure, Purchaser may terminate this Contract in whole or in part by written notice to Contractor. For the avoidance of doubt, the cure period set forth in the immediately preceding sentence does not apply to ***.

22.2 Termination Liability.

In the event of a termination for default pursuant to Article 22.1, Contractor shall ***. In all cases Contractor's liability shall be ***. Upon payment in full of all amounts due in accordance with the preceding sentences of this Article 22.2, ***. In such event Purchaser shall, *** take all action reasonably requested by Contractor to ***. In the event that this Contract is terminated as provided in this Article 22, Contractor shall protect and preserve property in the possession of Contractor in which Purchaser has an interest.

22.3 Partially Completed Items and Work In Process; Contractor's Reimbursement for Terminated Work.

In the event of termination pursuant to Article 22.1, upon Purchaser's request, Contractor shall deliver to Purchaser full title and possession, in either case, of (i) the Satellite, or (ii) all Raw Materials, Work-in-Process and Finished Goods, parts and other material together with any associated warranties, and any subcontracted items which Contractor has specifically produced or acquired or contracted for in accordance with this Contract associated with the uncompleted Satellite, provided that Purchaser shall have paid to Contractor the unpaid balance of any amounts due in accordance with the immediately following paragraph under this Article 22.3.

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In the event of termination pursuant to Article 22.1, ***

22.5 Contractor Termination.

Contractor may terminate this Contract upon written notice to Purchaser *** after receiving written notice thereof from Contractor ***. For the avoidance of doubt, Contractor shall not be entitled to terminate this Contract for Purchaser's *** and (ii) prior to Purchaser having received the written notice required above and being given at least *** prior to the termination hereunder to cure such failure. Termination pursuant to this Article 22.5 shall be on the same terms and conditions (including without limitation payment of Contractor) ***. The foregoing provisions of this Article 22.5 shall be ***. If, after termination pursuant to this Article 22.5, it is finally determined by arbitration, legal proceeding or mutual agreement that Purchaser ***. Purchaser timely cured any such failure, or such failure was excusable pursuant to Article 23 ***.

Upon completion of all payments to Contractor in connection with termination under this Article 22.5, Purchaser may, subject to Article 7 hereof, require Contractor to transfer to Purchaser in the manner and to the extent directed by Purchaser, title to and possession of any items comprising all or any part of the Work terminated (including without limitation all Work-in-progress, but not including any other portion of the Work to which Contractor would not have otherwise been obligated to transfer title hereunder had the Contract been completed) not used or disposed of by Contractor pursuant to the foregoing sentence. Contractor shall, upon direction of Purchaser, protect and preserve such items *** in the possession of Contractor or its Subcontractors and shall facilitate access to and possession by Purchaser of items comprising all or part of the Work terminated. ***

22.6 Survival.

The provisions of this Article 22 shall survive and remain in full force and effect, notwithstanding the expiration or termination of this Contract.

22.7 No Right to Terminate.

Neither Party shall have the right to terminate this Contract pursuant to this Article 22 ***.

23. FORCE MAJEURE

23.1 Force Majeure Event.

In the event that a Force Majeure event has occurred and is continuing, the performance obligations of a Party under this Contract that are directly affected by such Force Majeure event shall be tolled for the duration of such Force Majeure event, and the Party whose performance is affected shall not be liable to the other Party by reason of any delay in performance of this Contract that arises out of such Force Majeure event; provided that the Party whose performance is affected shall promptly take and continue to take all reasonable actions to abate such Force Majeure event as soon as possible. "Force Majeure" means any event beyond the reasonable control, and without the fault

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or negligence, of the affected Party and/or its suppliers and/or Subcontractors and includes, without limitation: (i) acts of God; (ii) acts of a public enemy; (iii) acts of a government in its sovereign capacity ***; (iv) war and warlike events; (v) catastrophic weather conditions such as hurricanes, tornados and typhoons; (vi) fire, earthquakes, floods, epidemics, quarantine restrictions, labor strikes, sabotage, riot and embargoes; ***. For an event to qualify for Force Majeure relief hereunder: (a) the event must be beyond the control and without fault or negligence of the Party whose performance is affected and/or its suppliers and/or Subcontractors; (b) the resulting delay cannot be circumvented by reasonable efforts to establish work-around plans, payment of expedited fees, alternate sources, or other means; and (c) the affected Party must provide the other Party with written notice thereof as soon as possible but in no event later than within *** after the affected Party becomes aware of the occurrence of such an event (except in the case of Contractor, with respect to Article 23.1(vii)). Notwithstanding anything to the contrary in the foregoing, any failure by a ***. The Parties shall use reasonable efforts to minimize the effect of any Force Majeure event. In the event a Party claims a Force Majeure event, such Party's written notice called for above shall include a detailed description of the portion of the Work (or other obligations) known to be affected by such delay ***. Upon the occurrence of Force Majeure event that causes an increase in the time required for the performance of this Contract, *** this Contract shall be modified in writing in accordance with and subject to Article 18; provided, however, ***.

23.2 Termination for Force Majeure.

In the event that a Force Majeure event *** occurs that extends for *** Purchaser shall have the right to terminate this Contract *** upon delivery of written notice to Contractor. In the event of a termination pursuant to the immediately preceding sentence: (i) upon Purchaser's request (provided that Purchaser shall have no obligation to make such request), the Parties' respective rights and obligations with respect to partially completed items and work-in-process as set forth in Article 22.3 shall apply; (ii) except to the extent that Purchaser exercises its rights set forth in subpart (i) above with respect to such Deliverable Items and/or work-in-progress, *** and (iii) Purchaser shall have no further obligation to make any further payments of the Firm Fixed Price to Contractor.

24. INTELLECTUAL PROPERTY RIGHTS; LICENSES

24.1 Intellectual Property Rights.

"Intellectual Property" means: (i) trademarks, logos, trade dress, trade names; (ii) all inventions (whether or not patentable), discoveries, improvements, ideas, know-how, formula methodology, research and development, processes and technology and software; (iii) all rights in Technical Data and Information; (iv) all common law, statutory and intangible proprietary rights and interests in and to the all of the foregoing, including without limitation, patents, copyrights, trade secrets, mask work registration and similar legally protected ownership interests. "Technical Data and Information" means documented information that is directly related to the design, development, manufacture, testing, launch, use, operation and maintenance of the Satellite. This term includes, for example, information in the form of drawings, photographs, technical writings, pictorial reproductions and specifications. This term also includes all source code, object code and VHDL code that would be necessary or useful in the design, development, manufacture, testing, launch,

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use, operation and maintenance of the Satellite. This term does not include financial reports, cost analysis and information incidental to Contract administration.

Contractor hereby grants to Purchaser and any successor owner of the Satellite and their respective Affiliates and contractors, a fully-paid up, royalty free, irrevocable and non-exclusive license to use, and sublicense the use of, and practice and have practiced throughout the world and in space, Intellectual Property exclusively for the purpose of: *** To the extent not previously provided to Purchaser, subject to U.S. export regulations and applicable export restrictions, Contractor shall provide all such Intellectual Property and Deliverable Data to Purchaser immediately following any termination of this Contract by Purchaser under Article 22 and *** and shall thereafter immediately provide Purchaser with all updates, supplements and additions to such Intellectual Property and Deliverable Data. The provisions of this paragraph shall survive and remain in full force and effect, notwithstanding the expiration or termination of this Contract.

*** proprietary hardware or software included within a Deliverable Item by Purchaser and its subcontractors to, operate, use, lease maintain, repair and replace the Satellite. Notwithstanding the foregoing, ***

24.2 Rights in Data.

Except as otherwise provided in Article 24.3, Contractor shall retain title to all Deliverable Data utilized or developed by Contractor during the performance of this Contract. Subject to U.S. export regulations and applicable export restrictions, Purchaser and any successor owner of the Satellite, and their respective officers, directors, employees, consultants, contractors and representatives, shall have the non-exclusive right to obtain and use the Deliverable Data for any and all purposes related to *** Purchaser's or any such successor's officers, directors, employees, consultants, contractors and representatives shall not disclose Deliverable Data to other companies, organizations or persons without the express prior written consent of Contractor, which consent shall not be unreasonably withheld, conditioned or delayed; provided that Purchaser shall have the right to disclose Deliverable Data to third parties to the extent reasonably necessary to ***. Except as otherwise provided in Article ***, Purchaser shall have no rights in Deliverable Data other than as expressly stated in this Contract, and title to Deliverable Data shall not pass to Purchaser or any other entity pursuant to the terms hereof. The provisions of this paragraph shall survive and remain in full force and effect, notwithstanding the expiration or termination of this Contract.

24.3 Purchaser and Joint Intellectual Property.

Purchaser owns all rights, title and interest in: (i) all Intellectual Property developed by, *** Purchaser prior to this Contract; and (ii) all Intellectual Property developed during this Contract by, *** Purchaser ***.

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With respect to Intellectual Property that is created during this Contract jointly by material contributions of employees and/or agents of both Parties (“Joint Intellectual Property”), Contractor and Purchaser shall ***. The expenses for preparing, filing and securing each Joint Intellectual Property patent application, and for issuance of the respective patent, shall be ***. *** shall furnish *** with all documents or other assistance that may be necessary for the filing and prosecution of each application. ***

The foregoing shall not prevent Contractor from offering or manufacturing any products or technology that it currently offers or manufactures.

24.4 Purchaser Intellectual Property.

Purchaser hereby grants to Contractor, and its Affiliates and contractors, a limited royalty-free and non-exclusive license to use Intellectual Property of Purchaser that Purchaser provides to Contractor ***. All right, title and interest in and to such Intellectual Property provided by Purchaser shall be and remain the sole and exclusive property of Purchaser. The license granted under this Article 24.4 is a limited license ***. Neither Contractor nor any of its Affiliates or Subcontractors shall have the right ***. Contractor shall maintain the confidentiality of Purchaser’s Intellectual Property (which shall constitute Proprietary Information subject to the provisions of Article 25).

24.5 Survival of Intellectual Property Rights.

The licenses to Intellectual Property and Deliverable Data and the grant of rights to obtain the same as herein provided shall survive any termination of this Contract by Purchaser under Article 22 and any termination by Contractor under Article 22.5 that is determined to have been wrongful until the end of life of the Satellite, and shall not be affected by any disposition of assets by Contractor.

25. DISCLOSURE AND HANDLING OF CONFIDENTIAL INFORMATION

25.1 Definition of Proprietary Information.

For the purpose of this Contract, “Proprietary Information” means all information (other than Deliverable Data, which is subject to the provisions of Article 24), in whatever form transmitted, that is disclosed or made available directly or indirectly by one Party (hereinafter referred to as the “disclosing party”) to the other Party hereto (hereinafter referred to as the “receiving party”) relating to the performance by the disclosing party of this Contract and: (i) is identified as proprietary by means of a written legend thereon, or (ii) if disclosed orally, is identified as proprietary at the time of initial disclosure. Proprietary Information shall not include any information disclosed by a Party that: (a) is already known to the receiving party at the time of its disclosure, as evidenced by written records of the receiving party, without an obligation of confidentiality at the time of disclosure; (b) is or becomes publicly known through no wrongful act of the receiving party; (c) is independently developed by the receiving party; (d) such Party is legally compelled to disclose; or (e) is obtained from a third party without restriction and without breach of this Contract.

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25.2 Terms for Handling and Use of Proprietary Information.

For a period of *** after receipt of any Proprietary Information, the receiving party shall not disclose Proprietary Information that it obtains from the disclosing party to any person or entity except its employees, representatives and agents (including Purchaser's Associates) and its Affiliates and their employees, representatives and agents who have a need to know in order to perform under this Contract and who have been informed of and have agreed to abide by the receiving party's obligations under this Article 25. The receiving party shall use not less than the same degree of care to avoid disclosure of such Proprietary Information as it uses for its own Proprietary Information of like importance; but in no event less than a reasonable degree of care. Proprietary Information shall be used only for the purpose of performing the obligations under this Contract, or as the disclosing party otherwise authorizes in writing.

25.3 Disclosure to Competitors.

In no event may Purchaser disclose Contractor Proprietary Information ***.

25.4 Legally Required Disclosures.

Notwithstanding the foregoing, in the event that the receiving party becomes legally compelled to disclose Proprietary Information of the disclosing party, including without limitation this Contract or other supporting document(s), the receiving party shall, to the extent practicable under the circumstances, provide the disclosing party with written notice thereof so that the disclosing party may seek a protective order or other appropriate remedy, or to allow the disclosing party to redact such portions of the Proprietary Information as the disclosing party deems appropriate. In any such event, the receiving party will disclose only such information as is legally required, and will cooperate with the disclosing party (at the disclosing party's expense) to obtain confidential and proprietary treatment for any Proprietary Information being disclosed.

25.5 Title; Return.

All Proprietary Information disclosed under this Contract in tangible form (including without limitation information incorporated in computer software or held in electronic storage means) shall be and remain the property of the disclosing party. All notes, memoranda or other materials created or fabricated by the receiving party, including without limitation evaluations, based upon Proprietary Information or prepared by the receiving party which include Proprietary Information shall be considered Proprietary Information for all purposes under this Contract. Subject to Purchaser's rights under Article *** upon request of the disclosing party, all such Proprietary Information shall be returned to the disclosing party or shall be destroyed by the receiving party and shall not thereafter be retained in any form by the receiving party. Upon request of the disclosing party, the receiving party shall certify in writing that such party has either returned or destroyed all Proprietary Information previously received from the disclosing party. The rights and obligations of the Parties under this Article 25 shall survive any such return or destruction of Proprietary Information.

25.6 Disclosure of Contract Terms.

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

Notwithstanding anything to the contrary in this Article 25, and subject to applicable export restrictions, the terms and conditions of this Contract may not be disclosed by either Party to any person except with the prior written consent of the other Party, provided, in each case, that the recipient of such information agrees to treat such information as confidential and executes and delivers a confidentiality agreement reasonably acceptable to both Parties or is otherwise subject to confidentiality obligations reasonably satisfactory to both Parties. Notwithstanding the foregoing, either Party shall have the right to disclose this Contract or any or all of the terms and conditions of this Contract: (i) as is required under applicable law or the binding order of a court or government agency; (ii) to United States and foreign governmental agencies for licensing and regulatory purposes; (iii) with respect to Purchaser ***; provided that: (a) the disclosure of such information shall be made in compliance with all applicable export control laws and (b) ***, the recipient of such information agrees to treat such information as confidential and executes a confidentiality agreement on terms substantially similar to those in this Contract or is otherwise subject to confidentiality obligations that are substantially similar to the confidentiality obligations set forth in this Contract. Both Parties hereby confirm that it will consider in good faith any reasonable and timely requests for redaction from the other Party.

26. PUBLICITY; PUBLIC RELEASE OF INFORMATION

Either Party intending to disclose publicly whether through the issuance of news releases, articles, brochures, advertisements, prepared speeches or other information releases concerning this Contract or the transactions contemplated herein shall obtain the prior written approval of the other Party with respect to the content and timing of such issuance. *** The obligations set forth in this Article 26 shall not apply to the following:

- (i) information that is publicly available from any governmental agency or that is or otherwise becomes publicly available without breach of this Contract; and
- (ii) disclosure required by applicable law or regulation, including without limitation, disclosure required by the Securities and Exchange Commission or the Nasdaq Stock Market or any other securities exchange on which the securities of a Party or its Affiliate is then trading.

For the avoidance of doubt, this Article 26 shall not preclude either Party from disclosing any internal publications or releases which are clearly marked or otherwise identifiable as confidential to a parent company or Affiliate of the disclosing party, provided that such parent company or Affiliate is bound by a non-disclosure agreement or is under confidentiality obligations with terms substantially similar to that of Articles 25 and 26.

27. OPTIONS

27.1 Replacement Satellite.

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

27.1.1 Satellite Replacement Option. In the event of loss, destruction or damage of the Satellite following Launch, or as described in Section 15.3, *** Purchaser may exercise such option in writing (“Satellite Replacement Option Exercise”) at any time during the period from EDC until the later of *** and (c) the period of time for Purchaser’s election as set forth in Article 15.3. Upon Satellite Replacement Option Exercise, ***.

27.1.2 Satellite Replacement Price. *** provided however, that such price shall be subject to the provisions set forth in Article 39. *** For the avoidance of doubt, Purchaser shall be responsible for the provision of Launch Services for the Replacement Satellite.

27.1.3 Exercise of Satellite Replacement Option. The Parties shall promptly incorporate the exercise of this option into the Contract through an amendment in accordance with Article 36.5.

27.1.4 Changes to the Replacement Satellite. Purchaser may modify the Performance Specification and/or the Work for the Replacement Satellite, provided that any such modification shall be treated as a change pursuant to Article 18.

27.2 Additional Satellites.

Purchaser shall have the option (but shall not be obligated), which Purchaser may exercise in writing at any time, ***.

In the event Purchaser exercises an option set forth in this Article 27.2, ***.

*** For the avoidance of doubt, Purchaser shall be responsible for the provision of Launch Services for the Additional Satellite.

27.3 Test Bed.

Purchaser shall have the option (but shall not be obligated), which Purchaser may exercise in writing no later than ***. If Purchaser exercises the Test Bed Option, Contractor shall develop, test and supply the Test Bed in accordance with Section 9.0 of Exhibit A and to meet the specifications set forth in Appendix E.1 of Exhibit B. The delivery schedule and delivery location for the Test Bed shall be set forth in Section 9 of Exhibit A, Statement of Work. The payment terms are set forth in Section 2 of Exhibit E, Payment Plan.

28. INSURANCE AND RISK MANAGEMENT SERVICES

28.1 Insurance Support.

Contractor shall, ***, timely perform the various insurance support activities described in the Statement of Work and in this Article 28.1. Subject to Article 25 and Article 7, upon Purchaser’s request, Contractor, ***, shall furnish to Purchaser and/or Purchaser Associates, their respective brokers, underwriters and insurers, such information regarding the Satellite as is requested by Purchaser, Purchaser Associates and their respective brokers, underwriters and insurers in connection with obtaining and maintaining insurance regarding risks relating to the Launch and/or

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in-orbit operation of the Satellite. Such information may include, without limitation: (i) providing a comprehensive presentation package on the Satellite suitable for presentation to the space insurance brokers and underwriters; (ii) supporting all necessary associated presentations (oral, written or otherwise), including without limitation attendance and participation in such presentations where requested by Purchaser; (iii) providing on a timely basis all reasonable and appropriate technical information, data and documentation; (iv) providing documentation and answers to insurer and underwriter inquiries; and (v) obtaining and maintaining any agreements and other approvals that are required (e.g., those agreements and approvals required pursuant to Article 7.3) for Purchaser's potential insurance providers to have access to all information required by such potential providers. Notwithstanding Articles 25 and 26, but subject to Article 7, Purchaser may disclose this Contract to its brokers and insurers without Contractor's consent, provided that Purchaser has entered into binding agreements with such brokers and insurers that limit the disclosure and use of such Contract on terms comparable to those contained herein.

Subject to Article 25 and Article 7, Contractor, *** shall cooperate with and provide reasonable and customary support to Purchaser and Purchaser Associates in making and perfecting claims for insurance recovery and as to any legal proceeding as may be brought by Purchaser associated with any claim for Satellite insurance recovery. Contractor shall furnish Purchaser (including without limitation Purchaser Associates) with any information that may be reasonably required to prepare and present any insurance claim regarding the Satellite and shall otherwise timely provide all reasonable assistance requested by Purchaser in connection with the procurement of insurance for the Satellite.

28.2 Contractor's Insurance.

28.2.1 Ground Insurance. During the period from EDC until Launch, Contractor shall obtain and maintain, ***, insurance coverage (the "Ground Insurance") against all risks of loss, including without limitation earthquake and other natural disasters and damage to the Satellite and its Components in an amount sufficient to cover the greater of: (i) the Contractor's full replacement value of the Satellite; and (ii) the amounts paid by Purchaser with respect to the Satellite. Such insurance shall be on reasonable and customary terms and shall include: (a) coverage for removal of debris, and insuring the structures, machines, equipment, facilities, fixtures and other properties constituting part of the project; (b) transit coverage, including without limitation ocean marine coverage (unless insured by the supplier); (c) off-site coverage for any key equipment; and (d) off-site coverage covering any property or equipment not stored on the construction site. The deductible for such insurance shall not exceed *** Contractor shall have Purchaser and/or its designees named as an additional named insured and additional loss payee on such insurance policy(ies) to the extent of their interest(s). Prior to commencing the Work, and whenever requested by Purchaser, Contractor agrees to furnish to Purchaser certificates of insurance evidencing that insurance required under this Article 28.2.1 is in full force and effect.

28.2.2 CGL Insurance. During the period from EDC until Launch, Contractor shall obtain and maintain, ***, Comprehensive General Liability Insurance (CGL) and other insurances to provide coverage of *** for bodily injury and/or property damage. Coverage shall include but not necessarily be limited to, premises and operations, products and completed operations

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and contracts. Contractor shall have Purchaser and/or its designees named as an additional named insured on such insurance policy(ies) to the extent of their interest(s). Prior to commencing the Work, and whenever requested by Purchaser, Contractor agrees to furnish to Purchaser certificates of insurance evidencing that insurance required under this Article 28.2.2 is in full force and effect.

28.2.3 Changes to Ground and CGL Insurance. Without limiting the generality of the foregoing, and to the extent Contractor is required to change material terms and conditions of such Ground Insurance or CGL, *** Contractor shall provide certificates of insurance which shall contain an endorsement setting forth that *** Contractor shall use commercially reasonable efforts to cause such insurance policies to contain a waiver of subrogation rights by the insurer against Purchaser, its Affiliates and their owners, officers, directors, employees, agents, subcontractors and customers. ***

The provisions of this Article 28.2 shall survive and remain in full force and effect, notwithstanding the expiration or termination of this Contract.

29. DISPUTE RESOLUTION

Any dispute, claim, or controversy between the Parties arising out of or relating to this Contract ("Dispute"), including any Dispute with respect to the interpretation, performance, termination, or breach of this Contract or any provision thereof shall be resolved as provided in this Article 29.

29.1 Informal Dispute Resolution.

Prior to the initiation of litigation, the Parties shall first attempt to resolve their Dispute informally, in a timely and cost-effective manner, as follows:

- (i) If, during the course of the Work, a Party believes it has a Dispute with the other Party, the disputing Party shall give written notice thereof, which notice will describe the Dispute and may recommend corrective action to be taken by the other Party. Contractor's program manager shall promptly consult with Purchaser contract manager in an effort to reach an agreement to resolve the Dispute;
- (ii) In the event that agreement cannot be reached within *** of receipt of written notice, either Party may request that the Dispute be escalated, and the respective positions of the Parties shall be forwarded to an executive level higher than that under paragraph (i) above for resolution of the Dispute;
- (iii) In the event agreement cannot be reached within *** of receipt of written notice, either Party may request that the Dispute be escalated, and the respective positions of the Parties shall be forwarded to the Chief Executive Officer (CEO) or equivalent of each Party for resolution of the Dispute; and

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

(iv) In the event agreement is not reached as provided in paragraphs (i), (ii), or (iii) above within a total of *** after receipt of the written notice described in Paragraph A above, either Party may proceed in accordance with Article 29.2.

29.2 Litigation.

Either Party shall be entitled to forego or terminate prematurely the informal dispute resolution process specified in Article 29.1 in the event such Party makes a good faith determination that (i) that amicable resolution through continued negotiation of the Dispute does not appear likely, (ii) a breach by the other Party is such that a temporary restraining order or other preliminary injunctive relief to enforce its rights or the other Party's obligations under the provisions of this Contract is necessary or (iii) litigation is appropriate to avoid the expiration of an applicable limitations period or to preserve a superior position with respect to creditors.

Any suit brought shall be brought in any court of competent jurisdiction in the State of New York sitting in the Borough of Manhattan, and the Parties hereby waive any objection to that venue and that court's exercise of personal jurisdiction over the case. The Parties hereby irrevocably consent to the exercise of personal jurisdiction by the state and federal courts in the State of New York sitting in the Borough of Manhattan concerning any Dispute between the Parties. If, for any reason, neither the state nor federal courts in New York sitting in the Borough of Manhattan will exercise jurisdiction over the Dispute, then litigation as permitted herein may be brought in any court of competent jurisdiction in the United States of America.

If a dispute arises as to whether or not a Party has committed or acted with gross negligence or willful misconduct, that issue alone shall be resolved by a New York court ***, and the court shall resolve such issue by applying the laws of the State of New York without regard to its conflict of law rules. ***

Nothing in this Contract precludes a Party that prevails on any claim from initiating litigation in any appropriate forum to enter or enforce a judgment based on the court's award on that claim.

Pending final resolution of any dispute (including the informal dispute resolution process and litigation), Contractor shall, unless otherwise directed by Purchaser in writing, perform all its obligations under this Contract, provided that Purchaser continues to make undisputed payments as they come due. For purposes of clarification, Contractor shall not be entitled to stop work under this Contract for Purchaser's failure to make payment hereunder to the extent Purchaser has disputed such payments in good faith pursuant to Article 5.2.

30. INTER-PARTY WAIVER OF LIABILITY FOR A LAUNCH

30.1 Launch Services Agreement Inter-Party Waiver of Liability.

Each Party hereby agrees to be bound by the no-fault, no-subrogation inter-party waiver of liability and related indemnity provisions required by the Launch Services Agreement with respect to the Launch and to cause their respective contractors and subcontractors at any tier (including without limitation suppliers of any kind) that are involved in the performance of this Contract and any other person having an interest in the Satellite or any Transponder thereon (including without limitation

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customers of Purchaser) to accede to such waiver and indemnity, which in every case shall include claims against the Launch Agency, either Party and their respective contractors and subcontractors at any tier (including without limitation suppliers of any kind) that are involved in the performance of this Contract. The Parties shall execute and deliver any instrument that may be reasonably required by the Launch Agency to evidence their respective agreements to be bound by such waivers.

30.2 Waiver of Subrogation.

The Parties also shall use reasonable efforts to obtain from their respective insurers, and shall require their respective contractors and subcontractors at any tier (including without limitation suppliers of any kind) that are involved in the performance of this Contract and any other person having an interest in the Satellite or any Transponder thereon (including without limitation non-consumer customers of Purchaser), to use reasonable efforts to obtain from their respective insurers, an express waiver of such insurers' rights of subrogation with respect to any and all claims that have been waived pursuant to this Article 30 (such reasonable efforts not to include payment of additional amounts or additional premiums for such waiver).

30.3 Indemnity Related to the Inter-Party Waiver of Liability.

Each Party shall indemnify and hold harmless the other Party and/or its contractors and subcontractors at any tier (including without limitation suppliers of any kind) that are involved in the performance of this Contract, from and against any claim made by the indemnifying Party and/or any of its contractors and subcontractors (including without limitation suppliers of any kind) that are involved in the performance of the Contract, or by any person having an interest in the Satellite or Transponder thereon (including without limitation customers of Purchaser), or by insurer(s) identified in Article 31.1, resulting from the failure of the indemnifying Party to waive any liability against, or to cause any other person the indemnifying Party is obligated to cause to waive any liability against, the Launch Agency, the other Party or either of their contractors and subcontractors at any tier (including without limitation suppliers of any kind) involved in the performance of this Contract. The Parties shall execute and deliver any instrument that may be reasonably required by the Launch Agency to evidence their respective agreements to be bound by such indemnifications.

30.4 Survival of Obligations.

The waiver, indemnification and hold harmless obligations provided in this Article 31 shall survive and remain in full force and effect, notwithstanding the expiration or termination of this Contract.

30.5 Third-Party Claims Coverage.

With respect to third party liability for death or bodily injury or for the loss of or damage to property that may be sustained, and any consequences thereof, resulting from, or arising in connection with the performance of the Launch Services for the Satellite, ***.

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

31. LIMITATION OF LIABILITY

31.1 Limitation.

*** NEITHER PARTY SHALL BE LIABLE DIRECTLY OR INDIRECTLY TO THE OTHER PARTY, TO ITS OFFICERS, DIRECTORS, EMPLOYEES, CONTRACTORS OR SUBCONTRACTORS AT ANY TIER (INCLUDING WITHOUT LIMITATION SUPPLIERS OF ANY KIND), AGENTS OR CUSTOMERS, TO ITS PERMITTED ASSIGNEES OR SUCCESSOR OWNERS OF ANY SATELLITE OR OTHER DELIVERABLE ITEM OR TO ANY OTHER PERSON CLAIMING BY OR THROUGH SUCH OTHER PARTY, FOR ANY AMOUNTS REPRESENTING LOSS OF PROFITS, LOSS OF BUSINESS, OR INDIRECT, SPECIAL, INCIDENTAL, EXEMPLARY, CONSEQUENTIAL OR PUNITIVE DAMAGES, INCLUDING WITHOUT LIMITATION LOST PROFITS, LOST REVENUES *** ARISING FROM OR RELATING TO THE PERFORMANCE OR NONPERFORMANCE OF THIS CONTRACT OR ANY ACTS OR OMISSIONS ASSOCIATED THEREWITH OR RELATED TO THE USE OF ANY ITEMS DELIVERED OR SERVICES FURNISHED HEREUNDER, WHETHER THE BASIS OF SUCH LIABILITY IS BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE OF ANY TYPE *** STATUTE OR OTHER LEGAL OR EQUITABLE THEORY.

31.2 Liability.

***, IN NO EVENT SHALL CONTRACTOR'S TOTAL LIABILITY ARISING OUT OF OR RELATING TO THIS CONTRACT EXCEED THE SUM OF: ***

31.5 Survival.

THIS ARTICLE 31 SHALL SURVIVE THE EXPIRATION OR TERMINATION OF THIS CONTRACT FOR WHATEVER CAUSE.

32. GROUND STORAGE

32.1 Notification.

Purchaser may direct Contractor to store the Satellite after completion of SPSR.

32.2 Location.

Ground Storage shall be performed at a Contractor controlled facility and shall be conducted in accordance with the satellite storage plan Section(s) of the Statement of Work.

32.3 Charges.

Except as set forth in Article 32.7, the firm fixed price for Ground Storage of the Satellite shall be *** while the Satellite is in Ground Storage, and in addition, ***.

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

32.4 Payments.

Payments shall be made on ***

32.5 Title and Risk of Loss.

Title and risk of loss to the Satellite shall remain with Contractor at all times until Launch, including while the Satellite is in Ground Storage. Contractor shall assume full responsibility for any loss or damage to the Satellite during Ground Storage.

32.6 Notification of Intention to Launch a Previously Stored Satellite.

Purchaser shall notify Contractor in writing that the Satellite in Ground Storage should be removed from Ground Storage and delivered ***. This notification must be received by Contractor not less than ***, or such shorter period as is reasonably acceptable to Contractor, prior to the scheduled date for Delivery to *** of the Satellite. Failure to notify Contractor in a timely manner will result in *** for such Satellite.

33. SUBCONTRACTS

33.2 No Privity of Contract.

Subject to the provisions of this Article 33, Contractor shall have the right to use such Subcontractors as may be necessary to perform the Work under this Contract. Nothing in this Contract shall be construed as creating any contractual relationship between Purchaser and any Subcontractor. Contractor is fully responsible to Purchaser for the acts or omissions of Subcontractors and of any other parties used by Contractor or a Subcontractor in connection with the performance of the Work. Any failure by a Subcontractor to meet its obligations to Contractor shall not constitute a basis for Force Majeure (except where such failure is itself a Force Majeure event), and shall not relieve Contractor from meeting any of its obligations under this Contract. Notwithstanding anything to the contrary herein, ***

34. KEY PERSONNEL

Contractor will assign properly qualified and experienced personnel to the program contemplated under this Contract. Personnel assigned to the following positions shall be considered "Key Personnel:"

*** Contractor shall provide a chart to Purchaser of the program Key Personnel and shall keep such chart current. Contractor shall promptly inform Purchaser upon becoming aware that any of the Key Personnel will be leaving the program.

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

35. NOTICES

35.1 Written Notification.

Each notice or correspondence required or permitted to be given hereunder shall be given in writing (except where oral notice is specifically authorized) to the respective addresses and to the attention of the individuals set forth below by overnight courier, charges prepaid, or first class registered or certified mail, return receipt requested, postage prepaid or electronic mail, upon confirmation of an electronic notice that the transmission has been delivered. The sending of such notice with confirmation of successful receipt of such notice shall constitute the giving thereof.

In the case of Purchaser:

EchoStar XXIV L.L.C.
c/o Hughes Network Systems, LLC
11717 Exploration Lane
Germantown, Maryland 20876

With a copy (sent via separate mailing) to:

Hughes Network Systems, LLC
11717 Exploration Lane
Germantown, Maryland 20876
Attn: General Counsel

In the case of Contractor:

Space Systems/Loral, LLC
3825 Fabian Way
Palo Alto, CA 94303-4697
Attn: Contract Manager

With a copy (sent via separate mailing) to:

Space Systems/Loral, LLC
3825 Fabian Way
Palo Alto, CA 94303-4697
Attn: Program Manager

35.2 Change of Address.

Either Party may, from time to time, change its notice address and/or fax number or the persons to be notified by giving the other Party written notice (as provided above) of such new information and the date upon which such change shall become effective.

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

36. GENERAL

36.1 Binding Effect; Assignment.

This Contract shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns as permitted hereunder. Except as otherwise expressly set forth to the contrary herein, this Contract, and the Parties' respective rights and obligations hereunder, may not be assigned, either in whole or in part, by either Party without the express written approval of the other Party *** In addition to, and without limitation of the foregoing, in no event shall Purchaser be obligated to accept an assignment of this Contract if such assignment would result in: ***.

36.2 Severability.

If any provision of this Contract is declared or found to be illegal, unenforceable or void, the Parties shall negotiate in good faith to agree upon a substitute provision that is legal and enforceable and is as nearly as possible consistent with the intentions underlying the original provision. If the remainder of this Contract is not materially affected by such declaration or finding and is capable of substantial performance, then the remainder shall be enforced to the extent permitted by law.

36.3 Captions.

The captions contained herein are for purposes of convenience only and shall not affect the construction of this Contract.

36.4 Relationships of the Parties.

It is expressly understood that Contractor and Purchaser intend by this Contract to establish the relationship of independent contractors only, and do not intend to undertake the relationship of principal and agent or to create a joint venture or partnership or any other relationship, other than that of independent contractors, between them or their respective successors in interests. Except as expressly set forth to the contrary herein, neither Contractor nor Purchaser shall have any authority to create or assume, in the name or on behalf of the other Party, any obligation, expressed or implied, or to act or purport to act as the agent or the legally empowered representative of the other Party, for any purpose whatsoever.

36.5 Entire Agreement.

This Contract, including all Exhibits and the Attachments hereto, represents the entire understanding and agreement between the Parties hereto with respect to the subject matter hereof, and supersedes all prior negotiations and agreements with respect to the subject matter hereof. This Contract may not be modified or amended, and the Parties' rights and obligations may not be waived, except by the written agreement of both Parties.

36.6 Standard of Conduct.

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

Both Parties agree that all their actions in carrying out the provisions of this Contract shall be in compliance with applicable laws and regulations and neither Party will pay or accept bribes, kickbacks or other illegal payments, or engage in unlawful conduct.

36.7 Construction.

This Contract, the Exhibits and the Attachments hereto have been drafted jointly by the Parties and in the event of any ambiguities in the language hereof, there shall be no inference drawn in favor of or against either Party.

36.8 Counterparts.

This Contract may be signed by facsimile and in any number of counterparts with the same effect as if the signature(s) on each counterpart were upon the same instrument.

36.9 Applicable Law.

Except as expressly set forth to the contrary in Article 29, this Contract shall be interpreted, construed and governed, and the rights of the Parties shall be determined, in all respects, according to the laws of the State of New York without regard to its conflict of law rules.

36.10 Survival.

Termination or expiration of this Contract for any reason shall not release either Party from any liabilities or obligations set forth in this Contract that: (i) the Parties have expressly agreed shall survive any such termination or expiration; or (ii) remain to be performed or by their nature would be intended to be applicable following any such termination or expiration.

36.11 U.N. Convention on the International Sales of Goods.

The U.N. Convention on the International Sales of Goods shall not apply or otherwise have any legal effect with respect to this Contract.

36.12 Waiver.

No delay or omission by either Party to exercise any right or power shall impair any such right or power or be construed to be a waiver thereof. No payment of money by any person or entity shall be construed as a waiver of any right or power under this Contract. A waiver by any Party of any of the covenants, conditions or contracts to be performed by the other Party or any breach thereof shall not be construed to be a waiver of any succeeding breach thereof or of any other covenant, condition or contract herein contained. No change, waiver or discharge hereof shall be valid unless in writing and signed by a duly authorized representative of the Party against which such change, waiver or discharge is sought to be enforced.

36.13 Third-Party Beneficiaries.

*** the provisions of this Contract are for the exclusive benefit of the Parties hereto, and nothing in this Contract, express or implied, is intended, or shall be deemed or construed, to confer upon any

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

third-party *** any rights, benefits, duties, obligations, remedies or interests of any nature or kind whatsoever under or by reason of this Contract.

36.14 Specific Performance.

Each Party recognizes that any material breach of the terms of this Contract would give rise to irreparable harm to the other Party for which money damages would not be an adequate remedy, and accordingly agrees that, any term of this Contract to the contrary notwithstanding, in addition to all other remedies available to it, each Party shall be entitled to enforce the terms of this Contract by a decree of specific performance against the other Party, in each case without the necessity of proving the inadequacy of money damages, provided that neither Party shall be entitled to receive the benefit of such specific performance with respect to any action by the other Party that would result in a violation by such other Party of any applicable law or regulation. Such remedy shall not be deemed the exclusive remedy for breach of this Contract, but shall be in addition to all other remedies that a Party may have at law, in equity, under contract or otherwise. The provisions of this Article 36.14 shall survive expiration or termination of this Contract indefinitely.

36.15 Order of Precedence.

In the event of any conflict or inconsistency among the terms of the Preamble, Articles 1 to 40 to this Contract and the Exhibits, the following order of decreasing precedence shall apply:

40. PURCHASER DELAY OF WORK

Except in the case of a Force Majeure event, in the event the performance of all or any part of the Work is delayed or interrupted by Purchaser's failure to perform its contractual obligations set forth in this Contract within the time specified in this Contract or within a reasonable time if no time is specified, or an act by Purchaser that unreasonably interferes with Contractor's performance of its obligations under this Contract or because of Purchaser's failure to obtain the authorizations contemplated in Article 6.2 (each a "Purchaser Delay"), ***, In the event that *** and this Contract shall be modified in writing in accordance with and subject to Article 18. Contractor shall use reasonable best efforts to avoid and/or mitigate the effect of such Purchaser Delay.

(signature page follows)

IN WITNESS THEREOF, the Parties have executed this Contract by their duly authorized officers as of the date set forth in the Preamble.

Space Systems/Loral, LLC

By: _____
Name: Jeremy Anderson
Title: Vice President and Chief Financial Officer

EchoStar XXIV L.L.C.

By: _____
Name: Dean Manson
Title: Executive Vice President, General Counsel
and Secretary

*** Certain confidential portions of this exhibit were omitted by means of redacting a portion of the text.

ECHOSTAR CORPORATION AND SUBSIDIARIES

LIST OF SUBSIDIARIES

As of December 31, 2019

Legal Entity	State or Country of Incorporation
Hughes Satellite Systems Corporation	Colorado
Hughes Communications, Inc.	Delaware
Hughes Network Systems, LLC	Delaware
Hughes Systique Corporation ⁽¹⁾	Delaware
HNS Participacoes e Empreendimentos, S.A.	Brazil
HNS Americas Comunicacoes, Ltda	Brazil
Hughes Telecomunicacoes do Brasil, Ltda	Brazil
Hughes Communications India Private Ltd	India
EchoStar Operating L.L.C.	Colorado
EchoStar Corporation	Nevada
EchoStar Satellite Services L.L.C.	Delaware
EchoStar XXIV L.L.C.	Colorado
EchoStar Mexico Holdings Corporation	Colorado
EchoStar Real Estate Corporation IV	Colorado
EchoStar Orbital L.L.C.	Colorado
Sawatch Limited	United Kingdom
EchoStar Mobile Limited	Ireland

⁽¹⁾ Hughes Systique Corporation is not a legal subsidiary of EchoStar Corporation as we own only approximately 43%.

Consent of Independent Registered Public Accounting Firm

The Board of Directors
EchoStar Corporation:

We consent to the incorporation by reference in the following registration statements of EchoStar Corporation (the Company) of our report dated February 20, 2020, with respect to the consolidated balance sheets of EchoStar Corporation and subsidiaries as of December 31, 2019 and 2018, and the related consolidated statements of operations and comprehensive income (loss), changes in stockholders' equity, and cash flows, for each of the years in the three-year period ended December 31, 2019, and the related notes and financial statement schedule II, and the effectiveness of internal control over financial reporting as of December 31, 2019, which report appears in the December 31, 2019 annual report on Form 10-K of EchoStar Corporation. Our audit report refers to the Company's adoption of Accounting Standards Update No. 2016-02, *Leases*, in 2019 and the adoption of Accounting Standards Update No. 2014-09, *Revenue from Contracts with Customers*, and Accounting Standards Update No. 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities*, in 2018.

Form	Registration Statement No.	Description
S-8	333-218658	Additional shares for Amended and Restated EchoStar Corporation 2017 Employee Stock Purchase Plan
S-8	333-218657	EchoStar Corporation 2017 Stock Incentive Plan EchoStar Corporation 2017 Non-Employee Director Stock Incentive Plan
S-8	333-162339	Additional shares for EchoStar Corporation 2008 Employee Stock Purchase Plan
S-8	333-148416	EchoStar Corporation (f/k/a EchoStar Holding Corporation) 2008 Stock Incentive Plan EchoStar Corporation (f/k/a EchoStar Holding Corporation) 2008 Employee Stock Purchase Plan EchoStar Corporation (f/k/a EchoStar Holding Corporation) 2008 Nonemployee Director Stock Option Plan EchoStar Corporation (f/k/a EchoStar Holding Corporation) 2008 Class B CEO Stock Option Plans

/s/ KPMG LLP

Denver, Colorado
February 20, 2020

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Dean A. Manson, individually, as the true and lawful attorney-in-fact and agent of the undersigned, with full power of substitution and resubstitution, for and in the name, place and stead of the undersigned, in any and all capacities, to sign the Annual Report on Form 10-K of EchoStar Corporation, a Nevada corporation formed in October 2007, for the year ended December 31, 2019, and any and all amendments thereto and to file the same, with all exhibits thereto and other documents in connection therewith, with the United States Securities and Exchange Commission, and hereby grants to each such attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully as to all intents and purposes as the undersigned might or could do in person, hereby ratifying and confirming all that such attorney-in-fact and agent, or his substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Power of Attorney has been signed by the following persons in the capacities and on the date indicated.

Signature	Title	Date
<u>/s/ Charles W. Ergen</u> Charles W. Ergen	Director	February 20, 2020
<u>/s/ R. Stanton Dodge</u> R. Stanton Dodge	Director	February 20, 2020
<u>/s/ Anthony M. Federico</u> Anthony M. Federico	Director	February 20, 2020
<u>/s/ Pradman P. Kaul</u> Pradman P. Kaul	Director	February 20, 2020
<u>/s/ Jeffrey R. Tarr</u> Jeffrey R. Tarr	Director	February 20, 2020
<u>/s/ C. Michael Schroeder</u> C. Michael Schroeder	Director	February 20, 2020
<u>/s/ William David Wade</u> William David Wade	Director	February 20, 2020

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
Section 302 Certification

I, Michael T. Dugan, certify that:

1. I have reviewed the Annual Report on Form 10-K of EchoStar Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 20, 2020

/s/ Michael T. Dugan

Chief Executive Officer, President and Director
(Principal Executive Officer)

CERTIFICATION OF CHIEF FINANCIAL OFFICER
Section 302 Certification

I, David J. Rayner, certify that:

1. I have reviewed the Annual Report on Form 10-K of EchoStar Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 20, 2020

/s/ David J. Rayner

Executive Vice President, Chief Financial Officer,
Chief Operating Officer and Treasurer
(Principal Financial and Accounting Officer)

CERTIFICATIONS OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
Section 906 Certifications

In connection with the annual report for the year ended December 31, 2019 on Form 10-K (the "Annual Report"), of EchoStar Corporation (the "Company") as filed with the Securities and Exchange Commission on the date hereof, we, Michael T. Dugan and David J. Rayner, Chief Executive Officer and Chief Financial Officer, respectively, of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant section 906 of the Sarbanes-Oxley Act of 2002, that to the best of our knowledge:

- (i) the Annual Report fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934; and
- (ii) the information contained in this Annual Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 20, 2020

/s/ Michael T. Dugan

Name: Michael T. Dugan
Title: Chief Executive Officer, President and Director
(Principal Executive Officer)

/s/ David J. Rayner

Name: David J. Rayner
Title: Executive Vice President, Chief Financial Officer,
Chief Operating Officer and Treasurer
(Principal Financial and Accounting Officer)

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of the Annual Report or as a separate disclosure document.

A SIGNED ORIGINAL OF THIS WRITTEN STATEMENT REQUIRED BY SECTION 906 HAS BEEN PROVIDED TO THE COMPANY AND WILL BE RETAINED BY THE COMPANY AND FURNISHED TO THE SECURITIES AND EXCHANGE COMMISSION OR ITS STAFF UPON REQUEST.

EchoStar Announces Financial Results for Three and Twelve Months Ended December 31, 2019

Englewood, CO, February 20, 2020—EchoStar Corporation (NASDAQ: SATS) today announced its financial results for the three and twelve months ended December 31, 2019.

Three Months Ended December 31, 2019 Financial Highlights:

- Consolidated revenues of \$499.0 million.
- Net loss from continuing operations of \$56.3 million, consolidated net loss attributable to EchoStar common stock of \$53.1 million, and diluted loss per share of \$(0.55).
- Consolidated Adjusted EBITDA of \$155.9 million (see discussion and the reconciliation of GAAP to this non-GAAP measure below).

Twelve Months Ended December 31, 2019 Financial Highlights:

- Consolidated revenues of \$1.9 billion.
- Net loss from continuing operations of \$113.7 million, consolidated net loss attributable to EchoStar common stock of \$62.9 million, and diluted loss per share of \$(0.65).
- Consolidated Adjusted EBITDA of \$582.8 million (see discussion and the reconciliation of GAAP to this non-GAAP measure below).

"I am pleased with our performance in the fourth quarter and full year of 2019" commented Michael Dugan, CEO and President of EchoStar. "We grew our revenue and Adjusted EBITDA from 2018. We completed a transformative spin-off of our BSS business to DISH Network Corporation as well as additional strategic transactions that allow us to focus on the growing broadband and connectivity markets. We concluded our joint venture with Yahsat in Brazil in November, and as part of that transaction, acquired approximately 20,000 additional consumer subscribers. Operationally, we grew our consumer subscriber base by another 20,000 in the fourth quarter driven by our international markets which brings our broadband subscriber total to approximately 1.477 million as of year-end 2019. Until our EchoStar 24/33 satellite is launched, we are focused on increasing the yield on our existing assets and are continuing to explore opportunities in pursuit of our strategy of being a global connectivity provider."

Three Months Ended December 31, 2019 - Additional Information:

- Consolidated revenue increased 10% or \$45.0 million year over year.
- Adjusted EBITDA increased 19% or \$25.1 million year over year.
 - Hughes segment Adjusted EBITDA increased by \$25.9 million primarily driven by higher revenue and associated margin from our consumer business and enterprise equipment sales. Adjusted EBITDA excludes all activity related to the India license fee dispute discussed below.
 - ESS segment Adjusted EBITDA was flat.
 - Corporate and Other segment Adjusted EBITDA decreased by \$0.5 million. The segment was impacted by the loss of the revenue and EBITDA associated with the transfer of certain real estate assets to DISH Network Corporation as part of the BSS transaction that were not treated as discontinued operations as well as continued investment in corporate development activities. This was partially offset by smaller equity losses of unconsolidated affiliates. During the fourth quarter, we changed our accounting policy to record our share of net earnings or losses of unconsolidated affiliates on a three month-lag. Based on this change, our results exclude Q4-19 activity from these equity investments.

- License fee dispute with the Government of India:
 - In October 2019, the Supreme Court of India issued an order affirming certain license fee assessments, interest, penalties, and interest on the penalties imposed by the Indian Department of Telecommunications ("DOT") related to a license fee dispute with the Government of India that dates back over a decade and has affected the entire Indian Telecom industry. On February 14, 2020, the Supreme Court of India denied the petitions filed by us and other telecommunication service providers asking the court to modify the order to permit the DOT to calculate the final amount due and extend the payment deadline. To date, the DOT has issued us written assessments of \$28.4 million for the license fees, penalties and interest. It is possible the DOT's assessment may be modified depending on the methodology it uses to calculate interest over the period in question.
 - As a result of the Supreme Court's decisions and based on the DOT's current methodology for assessing penalties and interest, we booked an additional accrual of \$60.8 million during the quarter which also impacted Net income (loss) attributable to non-controlling interest. This is summarized as follows (amounts in millions):

SG&A expense	\$	2.3
Interest expense, net of amounts capitalized	\$	58.5
Total	\$	60.8

Net income (loss) attributable to non-controlling interest	\$	9.4
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We now have \$80.2 million accrued for this matter as of December 31, 2019. Any eventual payments made with respect to the ultimate outcome may be different from our accrual and such differences could be significant.

- Net loss from continuing operations was \$56.3 million, a decrease of loss by \$72.5 million from last year. The decreased loss was primarily due to an impairment of long-lived asset of \$65.2 million in Q4-18, higher net gains on investments of \$45.0 million, and higher operating income (excluding impairments) of \$9.2 million. This was partially offset by higher net interest expense of \$45.5 million which includes \$58.5 of interest related to the license fee dispute with the Government of India discussed above. Excluding the impact of the license fee dispute (tax effected), Net earnings from continuing operations would have been \$4.3 million.
- Hughes broadband subscribers are approximately 1,477,000 as of December 31, 2019 including approximately 237,000 subscribers in Central and South America.
- Cash, cash equivalents and current marketable investment securities were \$2.5 billion as of December 31, 2019.

Set forth below is a table highlighting certain of EchoStar's segment results for the three and twelve months ended December 31, 2019 and 2018 (amounts in thousands) from continuing operations (all US GAAP amounts reference results from continuing operations):

	For the three months ended December 31,		For the twelve months ended December 31,	
	2019	2018	2019	2018
Revenue				
Hughes	\$ 491,823	\$ 444,642	\$ 1,852,742	\$ 1,716,528
EchoStar Satellite Services	4,384	4,669	16,257	27,231
Corporate and Other	2,799	4,672	17,082	18,879
Total revenue	<u>\$ 499,006</u>	<u>\$ 453,983</u>	<u>\$ 1,886,081</u>	<u>\$ 1,762,638</u>
Adjusted EBITDA				
Hughes	\$ 176,738	\$ 150,809	\$ 666,890	\$ 616,532
EchoStar Satellite Services	1,988	2,286	6,994	17,764
Corporate & Other:				
Corporate overhead, operating and other	(23,090)	(18,988)	(81,859)	(73,237)
Equity in earnings (losses) of unconsolidated affiliates, net	250	(3,303)	(9,257)	(5,954)
Total Corporate & Other	<u>(22,840)</u>	<u>(22,291)</u>	<u>(91,116)</u>	<u>(79,191)</u>
Total Adjusted EBITDA	<u>\$ 155,886</u>	<u>\$ 130,804</u>	<u>\$ 582,768</u>	<u>\$ 555,105</u>
Net income (loss) from continuing operations	<u>\$ (56,273)</u>	<u>\$ (128,774)</u>	<u>\$ (113,653)</u>	<u>\$ (132,362)</u>
Expenditures for property and equipment	<u>\$ 103,723</u>	<u>\$ 139,817</u>	<u>\$ 418,074</u>	<u>\$ 477,442</u>

Reconciliation of GAAP to Non-GAAP Measurement (amounts in thousands):

	For the three months ended December 31,		For the twelve months ended December 31,	
	2019	2018	2019	2018
Net income (loss)	\$ (63,094)	\$ (111,648)	\$ (74,252)	\$ (38,633)
Interest income	(17,535)	(24,038)	(82,352)	(80,275)
Interest expense, net of amounts capitalized	94,203	55,250	251,016	219,288
Income tax provision (benefit), net	7,882	(1,698)	20,488	6,576
Depreciation and amortization	129,146	118,379	490,765	457,116
Net (income) loss from discontinued operations	6,821	(17,126)	(39,401)	(93,729)
Net (income) loss attributable to non-controlling interests	9,976	(550)	11,335	(1,842)
EBITDA	167,399	18,569	577,599	468,501
(Gains) losses on investments, net	(825)	44,227	(28,912)	12,622
Impairment of long-lived assets	—	65,220	—	65,220
Litigation expense	(627)	2,750	25,701	2,750
Vendor settlement	—	—	—	(9,571)
License fee dispute - India, net of non-controlling interests	(7,150)	—	(3,210)	—
Foreign currency transaction (gains) losses, net	(2,911)	38	11,590	15,583
Adjusted EBITDA	\$ 155,886	\$ 130,804	\$ 582,768	\$ 555,105

Note on Use of Non-GAAP Financial Measures

EBITDA is defined as "Net income (loss)" excluding "Interest income and expense, net," "Income tax benefit (provision), net," "Depreciation and amortization," "Net income (loss) from discontinued operations," and "Net income (loss) attributable to noncontrolling interests."

Adjusted EBITDA is defined as EBITDA excluding "Gains and losses on investments, net," "Foreign currency transaction gains (losses), net," and other non-recurring or non-operational items. EBITDA and Adjusted EBITDA are not measures determined in accordance with US GAAP. EBITDA and Adjusted EBITDA are reconciled to "Net income (loss)" in the table above and should not be considered in isolation or as a substitute for operating income, net income or any other measure determined in accordance with US GAAP. Our management uses EBITDA and Adjusted EBITDA as measures of our operating efficiency and overall financial performance for benchmarking against our peers and competitors. Management believes that these non-GAAP measures provide meaningful supplemental information regarding the underlying operating performance of our business and are appropriate to enhance an overall understanding of our financial performance. Management also believes that EBITDA and Adjusted EBITDA are useful to investors because they are frequently used by securities analysts, investors, and other interested parties to evaluate the performance of companies in our industry.

The consolidated financial statements of EchoStar for the periods ended December 31, 2019 and 2018 are attached to this press release. Detailed financial data and other information are available in EchoStar's Annual Report on Form 10-K for the period ended December 31, 2019 filed today with the Securities and Exchange Commission.

EchoStar will host its earnings conference call on Thursday, February 20, 2020 at 11:00 a.m. Eastern Time. The call-in numbers are (877) 815-1625 (toll-free) and (716) 247-5178 (international), Conference ID 2585784.

About EchoStar Corporation

EchoStar Corporation (NASDAQ: SATS) is a premier global provider of satellite communications solutions. Headquartered in Englewood, Colo., and conducting business around the globe, EchoStar is a pioneer in secure communications technologies through its Hughes Network Systems and EchoStar Satellite Services business segments.

Safe Harbor Statement under the US Private Securities Litigation Reform Act of 1995

This press release may contain statements that are forward looking, as that term is defined by the Private Securities Litigation Reform Act of 1995. These forward-looking statements are based on management's beliefs, as well as assumptions made by, and information currently available to, management. When used in this release, the words "believe," "anticipate," "estimate," "expect," "intend," "project," "plans," and similar expressions and the use of future dates are intended to identify forward-looking statements. Although management believes that the expectations reflected in these forward-looking statements are reasonable, it can give no assurance that these expectations will prove to have been correct. You are cautioned not to place undue reliance on any forward-looking statements, which speak only as of the date made. We assume no responsibility for the accuracy of forward-looking statements or information or for updating forward-looking information or statements. These statements are subject to certain risks, uncertainties, and assumptions. See "Risk Factors" in EchoStar's Annual Report on Form 10-K for the period ended December 31, 2019 as filed with the Securities and Exchange Commission and in the other documents EchoStar files with the Securities and Exchange Commission from time to time.

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EHOSTAR CORPORATION
Condensed Consolidated Balance Sheets
(Amounts in thousands, except per share amounts)

		As of December 31,	
		2019	2018
Assets			
Current assets:			
Cash and cash equivalents	\$	1,519,431	\$ 928,306
Marketable investment securities		940,623	2,282,152
Trade accounts receivable and contract assets, net		196,629	201,096
Other current assets		179,531	165,809
Current assets of discontinued operations		—	3,486
Total current assets		<u>2,836,214</u>	<u>3,580,849</u>
Non-current assets:			
Property and equipment, net		2,528,738	2,534,666
Operating lease right-of-use assets		114,042	—
Goodwill		506,953	504,173
Regulatory authorizations, net		478,598	430,039
Other intangible assets, net		29,507	44,231
Other investments, net		325,405	266,513
Other non-current assets, net		334,841	338,390
Non-current assets of discontinued operations		—	962,433
Total non-current assets		<u>4,318,084</u>	<u>5,080,445</u>
Total assets	\$	<u>7,154,298</u>	\$ <u>8,661,294</u>
Liabilities and Stockholders' Equity			
Current liabilities:			
Trade accounts payable	\$	124,080	\$ 121,437
Current portion of long-term debt and finance lease obligations		486	919,582
Contract liabilities		101,060	72,284
Accrued expenses and other current liabilities		270,393	181,698
Current liabilities of discontinued operations		—	50,136
Total current liabilities		<u>496,019</u>	<u>1,345,137</u>
Non-current liabilities:			
Long-term debt and finance lease obligations, net of current portion		2,389,733	2,386,202
Deferred tax liabilities, net		351,692	287,989
Operating lease liabilities		96,941	—
Other non-current liabilities		74,360	80,304
Non-current liabilities of discontinued operations		—	406,188
Total non-current liabilities		<u>2,912,726</u>	<u>3,160,683</u>
Total liabilities		<u>3,408,745</u>	<u>4,505,820</u>
Commitments and contingencies			

Stockholders' equity:

Preferred stock, \$0.001 par value, 20,000,000 shares authorized, none issued and outstanding at both December 31, 2019 and 2018	—	—
Common stock, \$0.001 par value, 4,000,000,000 shares authorized:		
Class A common stock, \$0.001 par value, 1,600,000,000 shares authorized, 56,592,251 shares issued and 50,107,330 shares outstanding at December 31, 2019 and 54,142,566 shares issued and 47,657,645 shares outstanding at December 31, 2018	57	54
Class B convertible common stock, \$0.001 par value, 800,000,000 shares authorized, 47,687,039 shares issued and outstanding at both December 31, 2019 and 2018	48	48
Class C convertible common stock, \$0.001 par value, 800,000,000 shares authorized, none issued and outstanding at both December 31, 2019 and 2018	—	—
Class D common stock, \$0.001 par value, 800,000,000 shares authorized, none issued and outstanding at both December 31, 2019 and 2018	—	—
Additional paid-in capital	3,290,483	3,702,522
Accumulated other comprehensive income (loss)	(122,138)	(125,100)
Accumulated earnings (losses)	632,809	694,129
Treasury stock, at cost	(131,454)	(131,454)
Total EchoStar Corporation stockholders' equity	3,669,805	4,140,199
Non-controlling interests	75,748	15,275
Total stockholders' equity	3,745,553	4,155,474
Total liabilities and stockholders' equity	\$ 7,154,298	\$ 8,661,294

ECHOSTAR CORPORATION
Condensed Consolidated Statements of Operations
(Amounts in thousands, except per share amounts)

	For the years ended December 31,		
	2019	2018	2017
Revenue:			
Services and other revenue	\$ 1,619,271	\$ 1,557,228	\$ 1,285,666
Equipment revenue	266,810	205,410	239,489
Total revenue	<u>1,886,081</u>	<u>1,762,638</u>	<u>1,525,155</u>
Costs and expenses:			
Cost of sales - services and other (exclusive of depreciation and amortization)	561,353	563,907	500,773
Cost of sales - equipment (exclusive of depreciation and amortization)	226,002	176,600	195,151
Selling, general and administrative expenses	509,145	436,088	370,500
Research and development expenses	25,739	27,570	31,745
Depreciation and amortization	490,765	457,116	385,662
Impairment of long-lived assets	—	65,220	10,762
Total costs and expenses	<u>1,813,004</u>	<u>1,726,501</u>	<u>1,494,593</u>
Operating income (loss)	<u>73,077</u>	<u>36,137</u>	<u>30,562</u>
Other income (expense):			
Interest income	82,352	80,275	44,619
Interest expense, net of amounts capitalized	(251,016)	(219,288)	(184,389)
Gains (losses) on investments, net	28,912	(12,622)	53,453
Equity in earnings (losses) of unconsolidated affiliates, net	(14,734)	(5,954)	16,973
Foreign currency transaction gains (losses), net	(11,590)	(15,583)	1,218
Other, net	(166)	11,249	5,364
Total other income (expense), net	<u>(166,242)</u>	<u>(161,923)</u>	<u>(62,762)</u>
Income (loss) from continuing operations before income taxes	(93,165)	(125,786)	(32,200)
Income tax benefit (provision), net	(20,488)	(6,576)	155,107
Net income (loss) from continuing operations	(113,653)	(132,362)	122,907
Net income (loss) from discontinued operations	39,401	93,729	270,582
Net income (loss)	<u>(74,252)</u>	<u>(38,633)</u>	<u>393,489</u>
Less: Net income (loss) attributable to non-controlling interests	(11,335)	1,842	928
Net income (loss) attributable to EchoStar Corporation	(62,917)	(40,475)	392,561
Less: Net income (loss) attributable to Hughes Retail Preferred Tracking Stock	—	—	(1,209)
Net income (loss) attributable to EchoStar Corporation common stock	<u>\$ (62,917)</u>	<u>\$ (40,475)</u>	<u>\$ 393,770</u>
Earnings (losses) per share - Class A and B common stock:			
Basic earnings (loss) from continuing operations per share	\$ (1.06)	\$ (1.39)	\$ 1.29
Total basic earnings (loss) per share	\$ (0.65)	\$ (0.42)	\$ 4.13
Diluted earnings (loss) from continuing operations per share	\$ (1.06)	\$ (1.39)	\$ 1.27
Total diluted earnings (loss) per share	\$ (0.65)	\$ (0.42)	\$ 4.07

ECHOSTAR CORPORATION
Condensed Consolidated Statements of Cash Flows
(Amounts in thousands, except per share amounts)

	For the years ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income (loss)	\$ (74,252)	\$ (38,633)	\$ 393,489
Adjustments to reconcile net income (loss) to net cash flows from operating activities:			
Depreciation and amortization	588,200	598,178	533,849
Impairment of long-lived assets	—	65,220	10,762
Losses (gains) on investments, net	(28,912)	12,109	(53,453)
Equity in losses (earnings) of unconsolidated affiliates, net	14,734	6,037	(15,814)
Foreign currency transaction losses (gains), net	11,590	15,583	(1,218)
Deferred tax provision (benefit), net	32,542	26,327	(288,577)
Stock-based compensation	9,353	9,990	10,103
Amortization of debt issuance costs	5,912	7,923	7,378
Dividends received from unconsolidated affiliates	2,716	10,000	19,000
Proceeds from sale of trading securities	—	—	8,922
Changes in current assets and current liabilities, net:			
Trade accounts receivable and contract assets, net	8,289	(17,842)	421
Other current assets	(39,190)	18,577	200,584
Trade accounts payable	13,149	9,562	(78,419)
Contract liabilities	26,376	7,867	5,322
Accrued expenses and other current liabilities	66,352	12,183	7,402
Changes in non-current assets and non-current liabilities, net	13,166	(5,070)	(36,975)
Other, net	6,297	(3,489)	4,116
Net cash flows from operating activities	656,322	734,522	726,892
Cash flows from investing activities:			
Purchases of marketable investment securities	(993,369)	(2,973,254)	(855,717)
Sales and maturities of marketable investment securities	2,391,220	1,498,463	580,235
Investments in unconsolidated affiliates	(2,149)	(115,991)	—
Sale of investment in unconsolidated affiliates	—	1,558	17,781
Dividend received from unconsolidated affiliate	2,284	—	—
Purchase of other investments	(93,687)	—	—
Expenditures for property and equipment	(418,584)	(555,141)	(583,211)
Refunds and other receipts related to property and equipment	—	77,524	4,311
Expenditures for externally marketed software	(29,310)	(31,639)	(31,331)
Purchases of regulatory authorizations	(34,447)	—	—
Net cash flows from investing activities	821,958	(2,098,480)	(867,932)

Cash flows from financing activities:

Repurchase and maturity of the 2019 Senior Secured Notes	(920,923)	(70,173)	—
Repayment of other long-term debt and finance lease obligations	(29,347)	(41,019)	(37,670)
Payment of in-orbit incentive obligations	(5,447)	(5,350)	(5,487)
Net proceeds from Class A common stock options exercised	67,337	4,424	35,536
Net proceeds from Class A common stock issued under the Employee Stock Purchase Plan	9,779	9,368	8,758
Treasury share purchase	—	(33,292)	—
Purchase of non-controlling interest	(7,313)	—	—
Other, net	603	(521)	(1,065)
Net cash flows from financing activities	(885,311)	(136,563)	72
Effect of exchange rates on cash and cash equivalents	(575)	(2,233)	1,351
Net increase (decrease) in cash and cash equivalents	592,394	(1,502,754)	(139,617)
Cash and cash equivalents, including restricted amounts, beginning of period	929,495	2,432,249	2,571,866
Cash and cash equivalents, including restricted amounts, end of period	<u>\$ 1,521,889</u>	<u>\$ 929,495</u>	<u>\$ 2,432,249</u>

Supplemental disclosure of cash flow information:

Cash paid for interest (including capitalized interest)	\$ 195,331	\$ 240,596	\$ 207,617
Cash paid for income taxes	<u>\$ 3,575</u>	<u>\$ 5,209</u>	<u>\$ 11,033</u>



Supplemental Investor Information

February 20, 2020

Note Regarding Financial Information

On September 10, 2019, EchoStar Corporation (“EchoStar”) transferred to DISH Network Corporation (“DISH”) the portion of its business that managed, marketed and provided (i) broadcast satellite services primarily to DISH and its subsidiaries (“DISH Network”), and Dish Mexico, S. de R.L. de C.V. and its subsidiaries and (ii) telemetry, tracking and control services to satellites owned by DISH Network and a portion of EchoStar’s other businesses, and certain real estate assets and business operations (the “BSS Transaction”). The BSS Transaction was structured in a manner intended to be tax-free to EchoStar and its shareholders for U.S. federal income tax purposes.

Following consummation of the BSS Transaction, EchoStar no longer operates its former BSS business and, as a result, beginning in the third quarter of 2019, the operating results of EchoStar’s former BSS business, except for certain real estate assets that transferred in the transaction, will be presented as discontinued operations in EchoStar’s condensed consolidated financial statements.

The following unaudited financial information for EchoStar for the quarters ending March 31, June 30, September 30 and December 31, 2018 and 2019 reflect these changes for the periods presented.

The unaudited financial information is presented based on information currently available and is intended for informational purposes only. In addition, the unaudited financial information is not necessarily indicative of EchoStar’s future financial condition or results of operations.

The unaudited financial information should be read in conjunction with the audited consolidated financial statements and accompanying notes in Item 15. Exhibits, Financial Statement Schedules and Item 7. *Management’s Discussion and Analysis of Financial Condition and Results of Operations* included in EchoStar’s Annual Report on Form 10-K for the year ended December 31, 2019.

The data presented is based on available information and assumptions that EchoStar’s management believes are reasonable, factually supportable, reflect the impacts of events directly attributable to the BSS Transaction and for purposes of the statements of operations, are expected to have a continuing impact on EchoStar. The adjustments do not reflect the impacts of events that may occur after the BSS Transaction.

Post BSS Transaction – Continuing Ops (\$000)

	Q1-18	Q2-18	Q3-18	Q4-18	Q1-19	Q2-19	Q3-19	Q4-19
Revenue:								
Services and other revenue	\$ 370,885	\$ 388,207	\$ 399,428	\$ 398,708	\$ 402,668	\$ 402,786	\$ 406,537	\$ 407,2
Equipment revenue	42,947	50,342	56,846	55,275	51,714	57,645	65,725	91,7
Total revenue	<u>413,832</u>	<u>438,549</u>	<u>456,274</u>	<u>453,983</u>	<u>454,382</u>	<u>460,431</u>	<u>472,262</u>	<u>499,0</u>
Costs and expenses:								
Cost of sales - services and other	138,489	140,842	142,291	142,285	143,347	142,679	143,842	131,4
Cost of sales - equipment	39,071	41,865	46,318	49,346	45,007	46,549	51,188	83,2
Selling, general and administrative expenses	103,257	103,076	107,468	122,287	112,114	149,209	122,629	125,1
Research and development expenses	7,137	6,646	6,545	7,242	6,888	6,388	6,136	6,3
Depreciation and amortization	110,270	113,143	115,324	118,379	118,978	120,267	122,374	129,1
Impairments	-	-	-	65,220	-	-	-	-
Total costs and expenses	<u>398,224</u>	<u>405,572</u>	<u>417,946</u>	<u>504,759</u>	<u>426,334</u>	<u>465,092</u>	<u>446,169</u>	<u>475,4</u>
Operating Income	<u>15,608</u>	<u>32,977</u>	<u>38,328</u>	<u>(50,776)</u>	<u>28,048</u>	<u>(4,661)</u>	<u>26,093</u>	<u>23,5</u>
Other income (expense):								
Interest income	15,635	19,253	21,349	24,038	24,429	23,213	17,175	17,5
Interest expense, net of amounts capitalized	(55,055)	(54,105)	(54,878)	(55,250)	(53,199)	(53,749)	(49,865)	(94,2
Gains (losses) on investments, net	(36,664)	65,396	2,873	(44,227)	6,937	12,855	8,295	8
Equity in earnings (losses) of unconsolidated affiliates, net	(1,009)	(2,058)	416	(3,303)	(6,354)	(4,754)	(3,209)	(4
Foreign currency transaction gains (losses), net	209	(11,689)	(4,065)	(38)	(1,160)	1,753	(15,094)	2,9
Other, net	(5)	11,353	817	(916)	(41)	7	(1,493)	1,3
Total other income (expense), net	<u>(76,889)</u>	<u>28,150</u>	<u>(33,488)</u>	<u>(79,696)</u>	<u>(29,388)</u>	<u>(20,675)</u>	<u>(44,191)</u>	<u>(71,9</u>
Income (loss) from continuing operations before income taxes	(61,281)	61,127	4,840	(130,472)	(1,340)	(25,336)	(18,098)	(48,3
Income tax provision, net	4,574	(4,886)	(7,962)	1,698	(2,898)	(4,692)	(5,016)	(7,8
Net income (loss) from continuing operations	(56,707)	56,241	(3,122)	(128,774)	(4,238)	(30,028)	(23,114)	(56,2
Net income (loss) from discontinued operations	35,536	21,443	19,624	17,126	19,246	24,968	2,008	(6,8
Net income (loss)	(21,171)	77,684	16,502	(111,648)	15,008	(5,060)	(21,106)	(63,0
Less: Net income (loss) attributable to non-controlling interests	380	462	450	550	806	632	(2,797)	(9,9
Net income (loss) attributable to EchoStar Corporate common stock	<u>\$ (21,551)</u>	<u>\$ 77,222</u>	<u>\$ 16,052</u>	<u>\$ (112,198)</u>	<u>\$ 14,202</u>	<u>\$ (5,692)</u>	<u>\$ (18,309)</u>	<u>\$ (53,1</u>
EBITDA	\$ 88,029	\$ 208,660	\$ 153,243	\$ 18,569	\$ 145,602	\$ 124,835	\$ 139,763	\$ 167,3
Adjusted EBITDA	\$ 124,484	\$ 145,382	\$ 154,435	\$ 130,804	\$ 139,825	\$ 134,731	\$ 152,326	\$ 155,8

Post BSS Transaction – Continuing Ops (\$000)

	Q1-18	Q2-18	Q3-18	Q4-18	Q1-19	Q2-19	Q3-19	Q4-19
Segment Operating Results:								
Revenue								
Hughes	\$ 400,818	\$ 426,306	\$ 444,762	\$ 444,642	\$ 445,337	\$ 451,847	\$ 463,735	\$ 491,8
ESS	8,264	7,496	6,802	4,669	4,033	3,742	4,098	4,3
Corporate and Other	4,750	4,747	4,710	4,672	5,012	4,842	4,429	2,7
Total	\$ 413,832	\$ 438,549	\$ 456,274	\$ 453,983	\$ 454,382	\$ 460,431	\$ 472,262	\$ 499,0
Adjusted EBITDA								
Hughes	\$ 137,564	\$ 160,668	\$ 167,491	\$ 150,809	\$ 161,642	\$ 155,212	\$ 173,298	\$ 176,7
ESS	5,933	4,858	4,687	2,286	1,729	1,486	1,791	1,9
Corporate and Other	(19,013)	(20,144)	(17,743)	(22,291)	(23,546)	(21,967)	(22,763)	(22,8
Total	\$ 124,484	\$ 145,382	\$ 154,435	\$ 130,804	\$ 139,825	\$ 134,731	\$ 152,326	\$ 155,8
Reconciliation of GAAP to Non-GAAP Measurement:								
Net income (loss)	(21,171)	77,684	16,502	(111,648)	15,008	(5,060)	(21,106)	(63,0
Interest income	(15,635)	(19,253)	(21,349)	(24,038)	(24,429)	(23,213)	(17,175)	(17,5
Interest expense, net of amounts capitalized	55,055	54,105	54,878	55,250	53,199	53,749	49,865	94,2
Income tax provision (benefit), net	(4,574)	4,886	7,962	(1,698)	2,898	4,692	5,016	7,8
Depreciation and amortization	110,270	113,143	115,324	118,379	118,978	120,267	122,374	129,1
Net (income) loss from discontinued operations	(35,536)	(21,443)	(19,624)	(17,126)	(19,246)	(24,968)	(2,008)	6,8
Net (income) loss attributable to non-controlling interests	(380)	(462)	(450)	(550)	(806)	(632)	2,797	9,9
EBITDA	\$ 88,029	\$ 208,660	\$ 153,243	\$ 18,569	\$ 145,602	\$ 124,835	\$ 139,763	\$ 167,3
(Gains) losses on investments, net	36,664	(65,396)	(2,873)	44,227	(6,937)	(12,855)	(8,295)	(8
Impairment of long-lived assets	-	-	-	65,220	-	-	-	-
Litigation expense	-	-	-	2,750	-	24,504	1,824	(6
Vendor settlement	-	(9,571)	-	-	-	-	-	-
License fee dispute - India, net of non-controlling interests	-	-	-	-	-	-	3,940	(7,1
Foreign currency transaction (gains) losses, net	(209)	11,689	4,065	38	1,160	(1,753)	15,094	(2,9
Adjusted EBITDA	\$ 124,484	\$ 145,382	\$ 154,435	\$ 130,804	\$ 139,825	\$ 134,731	\$ 152,326	\$ 155,8

Note on Use of Non-GAAP Financial Measures

EBITDA is defined as “Net income (loss)” excluding “Interest income and expense, net”, “Income tax benefit (provision), net”, “Depreciation and amortization,” “Net income (loss) from discontinued operations,” and “Net income (loss) attributable to noncontrolling interests.”

Adjusted EBITDA is defined as EBITDA excluding “Gains and losses on investments, net,” “Foreign currency transaction gains (losses), net”, and other non-recurring or non-operational items.

EBITDA and Adjusted EBITDA are not measures determined in accordance with US GAAP. EBITDA and Adjusted EBITDA are reconciled to “Net income (loss)” in the table above and should not be considered in isolation or as a substitute for operating income, net income or any other measure determined in accordance with US GAAP. Our management believes that EBITDA and Adjusted EBITDA as measures of our operating efficiency and overall financial performance for benchmarking against our peers and competitors. Management believes that these non-GAAP measures provide meaningful supplemental information regarding the underlying operating performance of our business and are appropriate to enhance an overall understanding of our financial performance. Management also believes that EBITDA and Adjusted EBITDA are useful to investors because they are frequently used by securities analysts, investors, and other interested parties to evaluate the performance of companies in our industry.

