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

FORM 10-K

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

For the Fiscal Year Ended December 31, 2022
OR

☐
TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the Transition Period from to

Commission File Number 001-33117

GLOBALSTAR, INC.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	**41-2116508**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)

1351 Holiday Square Blvd.
Covington, Louisiana 70433
(Address of Principal Executive Offices)

Registrant's Telephone Number, Including Area Code **(985) 335-1500**

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

Title of each class	Trading Symbol	Name of exchange on which registered
Common Stock, par value $0.0001 per share	**GSAT**	**NYSE American**

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

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

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

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

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

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

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management’s assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.
Yes ☒ No ☐

Indicate by check mark whether the registrant is a shell company (as defined by Rule 12b-2 of the Exchange Act)

Yes ☐ No ☒

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

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

The aggregate market value of the registrant's common stock held by non-affiliates at June 30, 2022, the last business day of the registrant's most recently completed second fiscal quarter, was approximately $0.8 billion.

As of February 24, 2023, 1,811 million shares of voting common stock were outstanding, 0.1 million shares of preferred stock were outstanding, and no shares of nonvoting common stock were authorized or outstanding. Unless the context otherwise requires, references to common stock in this Report mean the Registrant's voting common stock.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's Proxy Statement for the 2023 Annual Meeting of Stockholders are incorporated by reference in Part III of this Report.

FORM 10-K

For the Fiscal Year Ended December 31, 2022

TABLE OF CONTENTS

		Page
	PART I	
Item 1.	Business	3
Item 1A.	Risk Factors	14
Item 1B.	Unresolved Staff Comments	28
Item 2.	Properties	28
Item 3.	Legal Proceedings	29
Item 4.	Mine Safety Disclosures	29
	PART II	
Item 5.	Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	29
Item 6.	[Reserved]	29
Item 7.	Management's Discussion and Analysis of Financial Condition and Results of Operations	29
Item 7A.	Quantitative and Qualitative Disclosures About Market Risk	41
Item 8.	Financial Statements and Supplementary Data	43
Item 9.	Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	91
Item 9A.	Controls and Procedures	91
Item 9B.	Other Information	92
Item 9C.	Disclosure Regarding Foreign Jurisdictions that Prevent Inspections	92
	PART III	
Item 10.	Directors, Executive Officers and Corporate Governance	92
Item 11.	Executive Compensation	92
Item 12.	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	92
Item 13.	Certain Relationships and Related Transactions, and Director Independence	92
Item 14.	Principal Accountant Fees and Services	92
	PART IV	
Item 15.	Exhibits and Financial Statement Schedules	93
Item 16.	Form 10-K Summary	94
Signatures		94

PART I

Forward-Looking Statements

Certain statements contained in or incorporated by reference into this Annual Report on Form 10-K (the "Report"), other than purely historical information, including, but not limited to, estimates, projections, statements relating to our business plans, objectives and expected operating results, and the assumptions upon which those statements are based, are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements generally are identified by the words "believe," "project," "expect," "anticipate," "estimate," "intend," "strategy," "plan," "may," "should," "will," "would," "will be," "will continue," "will likely result," and similar expressions, although not all forward-looking statements contain these identifying words. These forward-looking statements are based on current expectations and assumptions that are subject to risks and uncertainties which may cause actual results to differ materially from the forward-looking statements. Forward-looking statements, such as the statements regarding our ability to develop and expand our business (including our ability to monetize our spectrum rights), our anticipated capital spending, our ability to manage costs, our ability to exploit and respond to technological innovation, the effects of laws and regulations (including tax laws and regulations) and legal and regulatory changes (including regulation related to the use of our spectrum), the opportunities for strategic business combinations and the effects of consolidation in our industry on us and our competitors, our anticipated future revenues, our anticipated financial resources, our expectations about the future operational performance of our satellites (including their projected operational lives), our expectations for future increases in our revenue and profitability, our performance and financial results under the Service Agreements, the expected strength of and growth prospects for our existing customers and the markets that we serve, commercial acceptance of new products, problems relating to the ground-based facilities operated by us or by independent gateway operators, worldwide economic, geopolitical and business conditions and risks associated with doing business on a global basis, business interruptions due to natural disasters, unexpected events or public health crises, including viral pandemics such as the COVID-19 coronavirus, and other statements contained in this Report regarding matters that are not historical facts, involve predictions. Risks and uncertainties that could cause or contribute to such differences include, without limitation, those in Item 1A. Risk Factors of this Report. We do not intend, and undertake no obligation, to update any of our forward-looking statements after the date of this Report to reflect actual results or future events or circumstances.

Item 1. Business

Mobile Satellite Services Business

Globalstar, Inc. (“we,” “us” or the “Company”) provides Mobile Satellite Services (“MSS”) including voice and data communications services in addition to wholesale capacity services through its global satellite network. We offer these services over our network of in-orbit satellites and our active ground stations (“gateways”), which we refer to collectively as the Globalstar System. In addition to supporting Internet of Things ("IoT") data transmissions in a variety of applications, we provide reliable connectivity in areas not served or underserved by terrestrial wireless and wireline networks and in circumstances where terrestrial networks are not operational due to natural or man-made disasters. By providing wireless communications services across the globe, we meet our customers' increasing desire for connectivity.

Business Strategy

Our competitive advantages are leveraged through a strategy that relies primarily on four pillars to drive increasing shareholder value: wholesale satellite capacity, terrestrial spectrum, IoT and legacy services. The four pillars are outlined below.

Wholesale Satellite Capacity

Wholesale satellite capacity services include satellite network access and related services using our satellite spectrum and network of satellites and gateways.

In September 2022, Apple Inc. (“Partner”) announced new satellite-enabled services for certain of its products (the “Services”). We are the satellite operator for the Services pursuant to the agreement (the “Service Agreement”) and certain related ancillary agreements (such agreements, together with the Service Agreement, as each is amended from time to time, the “Service Agreements”). The Services constitute the service which was previously described and disclosed as the Terms Agreement.

Since execution of the Service Agreements in 2020 and prior to the commencement of the Services in 2022, the parties completed several milestones, including (i) a feasibility phase, (ii) material upgrades to our ground network, (iii) construction of 10 new gateways around the world, (iv) the successful launch of the ground spare satellite, and (v) rigorous in-field system testing. The Service Agreements generally require us to allocate network capacity to support the Services, and Partner to enable Band 53/n53 for use in cellular-enabled devices designated by Partner for use with the Services.

Partner made the Services available to its customers beginning in November 2022 (the “Service Launch”). In consideration for the Services provided by us, Partner will make payments to us under the Service Agreements, such as a recurring service fee, payments relating to certain Service-related operating expenses and capital expenditures, including under the satellite procurement agreement with Macdonald, Dettwiler and Associates Corporation ("MDA" or, the "Vendor"), and potential bonus payments subject to satisfaction of certain licensing, service and related criteria.

In addition to the services provided under the Service Agreements, we intend to continue to develop wholesale customer opportunities over our retained satellite capacity (discussed below) for IoT and other initiatives.

We retain 15% of network capacity to support our existing and future Duplex, SPOT and IoT subscribers. This capacity can support a substantial increase in our own subscriber base, particularly following recent and planned investments in our space and ground segments. The retained satellite capacity can be used by us directly or through additional wholesale arrangements.

Terrestrial Spectrum

We have terrestrial licenses in 11 countries resulting in approximately 10.0 billion MHz-POPs (megahertz of our spectrum authority in each country multiplied by a total population of approximately 797 million over the covered area). Prospective spectrum partners, including cable companies, legacy or upstart wireless carriers, system integrators, utilities and other infrastructure operators, all benefit from access to uniform and increasingly “borderless” spectrum working across geographies. Our expanding portfolio of terrestrial spectrum represents a substantial opportunity for us. Given our senior status as the incumbent operator in the Big LEO band, we believe that our valuable assets include our extensive portfolio of domestic and international licenses to access the globally harmonized spectrum that is essential to all of the services that we offer today and into the future. The Service Agreements significantly enhance the device ecosystem for Band 53/n53.

IoT

Satellite IoT connectivity has become more critical to a growing number of sectors and use cases. We plan to continue to evolve and develop our IoT initiatives. In June 2022, we introduced the Realm Enablement Suite, an innovative portfolio of satellite asset tracking hardware and software solutions featuring a powerful application enablement platform for processing smart data at the edge, which improves processing time and reliability in remote locations. With Realm, partners can accelerate new solutions to market with smart applications that generate an advanced level of telematics data. The Realm Enablement Suite includes Integrity 150, the first solar-powered, deployment-ready satellite asset tracking device with an application enablement platform; ST150M, a satellite modem module that drastically simplifies product development; and the Realm application enablement platform, which will offer tools and an extensive library for quickly accessing and developing smart applications at the edge for vertical-specific solutions.

We also continue to expand deployments that support environmentally friendly initiatives, including remote monitoring of fluid levels and tanks, which replaces the need for motor vehicles to access these assets, as well as asset monitoring solutions for solar lighting and other renewable energy sources.

In 2023, we expect to introduce a two-way commercial IoT product which would significantly expand our opportunities in the IoT Market because this technology would have capabilities that include both tracking as well as command control.

Legacy Services

We remain committed to our legacy satellite business and serving our current subscriber base while offering future innovations in MSS. Our existing Duplex and SPOT customers are expected to benefit from expanded capacity through additional ground infrastructure and satellites which improve service levels.

Communications Products and Services

We currently provide the following communications services:

- two-way voice communication and data transmissions via our GSP-1600 and GSP-1700 phone ("Duplex");
- one-way or two-way communication and data transmissions using mobile devices, including our SPOT family of products, such as SPOT X®, SPOT Gen4™ and SPOT Trace®, that transmit messages and the location of the device ("SPOT");
- one-way data transmissions using a mobile or fixed device that transmits its location and other information to a central monitoring station, including our commercial IoT products, such as our battery- and solar-powered SmartOne, STX-3, ST100, ST-150 and Integrity 150 ("Commercial IoT");
- satellite network access and related services utilizing our satellite spectrum and network of satellites and gateways ("Wholesale Capacity Services"); and
- engineering and other communication services using our MSS and terrestrial spectrum licenses ("Engineering and Other").

We compete aggressively on price. We offer a range of price-competitive products to the industrial, governmental and consumer markets. We expect to retain our position as a cost-effective, high-quality leader in the MSS industry.

As technological advancements are made, we continue to explore opportunities to develop new products and provide new services over our network to meet the needs of our existing and prospective customers. We have pursued and continue to pursue initiatives that we expect will expand our satellite communications business and even more intensively utilize our network assets. These initiatives include evaluating our product and service offerings in light of the shift in demand across the MSS industry from full Duplex voice and data services to direct-to-handset and IoT-enabled devices. Integrated with this assessment is the development of a two-way reference design module to expand our Commercial IoT offerings, which is among our other current initiatives. In recent years, we have considered the value of maintaining our second-generation Duplex services in light of alternative uses for our capacity, including uses under the Service Agreements. As previously disclosed, in September 2022, we abandoned our second-generation Duplex assets, including gateway property, prepaid licenses and royalties, and inventory. We will continue to support first-generation Duplex services, including voice communications and data transmissions using our satellite phones and data modems.

Globalstar System

Satellite Network

Our constellation of Low Earth Orbit ("LEO") satellites includes second-generation satellites and certain first-generation satellites. We designed our satellite network so that at least one satellite is visible from any point on the Earth's surface between the latitudes 70° north and 70° south. We designed our second-generation satellites to last twice as long in space, have 40% greater capacity and be built at a significantly lower cost compared to our first-generation satellites.

Our goal is to provide service levels and call or message success rates equal to or better than our MSS competitors so our products and services are attractive to potential customers. We believe that our system outperforms geostationary (“GEO”) satellites used by some of our competitors. GEO satellite signals must travel approximately 42,000 additional miles on average, which introduces considerable delay and signal degradation to GEO calls.

In February 2022, we entered into a satellite procurement agreement with MDA pursuant to which we expect to acquire 17 satellites that will replenish our existing constellation and ensure long-term continuity of our mobile satellite services. We are acquiring the satellites to provide continuous satellite services to Partner under the Service Agreements, as well as services to our current and future customers. We have committed to purchase these new satellites for a total contract price of $327.0 million and have the option to purchase additional satellites at a lower per unit cost, subject to certain conditions. The technical specifications and design of these new satellites are similar to our current second-generation satellites. Rocket Lab USA, Inc. is the Vendor’s satellite bus subcontractor. The satellite procurement agreement requires the Vendor to deliver 17 new satellites by 2025, all of which are expected to be launched by the end of 2025. Under the Service Agreements, subject to certain terms and conditions, Partner has agreed to make service payments equal to 95% of the approved capital expenditures under the satellite procurement agreement (to be paid on a straight-line basis over the useful life of the satellites) and certain other costs incurred for the new satellites, as adjusted based on certain provisions, beginning with the Phase 2 Service Period.

In June 2022, we successfully launched our on-ground spare second-generation satellite. This satellite is expected to remain as an in-orbit spare and will only be raised to its operational orbit at a future date if needed.

Ground Network

Our satellites communicate with a network of gateways, each of which serves an area of approximately 700,000 to 1,000,000 square miles. A gateway must be within line-of-sight of a satellite and the satellite must be within line-of-sight of the subscriber to provide services. We have positioned our gateways to provide coverage over most of the Earth's land and human population and continue to evaluate and expand our gateway footprint to optimize coverage.

Each of our gateways has multiple antennas that communicate with our satellites and pass communications seamlessly between antenna beams and satellites as the satellites traverse the gateways, thereby reflecting the signals from our users' terminals to our gateways. Once a satellite acquires a signal from an end-user, the Globalstar System authenticates the user and establishes the voice or data channel to complete the call to the public switched telephone network ("PSTN"), a cellular or another wireless network or the internet for data communications including Commercial IoT. Over the past few years, we have procured and installed new antennas at our new and existing gateways around the world.

We believe that our network's design enables faster and more cost-effective system maintenance and upgrades because the system's software and much of its hardware are located on the ground. Our multiple gateways allow us to reconfigure our system quickly to extend another gateway's coverage to make up for lost coverage from a disabled gateway or to handle increased call capacity resulting from surges in demand.

Our ground network includes our ground equipment, which uses patented CDMA technology to permit communication to multiple satellites. Our system architecture provides full frequency re-use. This maximizes satellite diversity (which maximizes quality) and network capacity as we can reuse the assigned spectrum in every satellite beam in every satellite. In addition, we have developed a proprietary technology for our SPOT and Commercial IoT services.

Throughout the past few years, we have commenced leases for additional gateways around the world. We also made significant progress on our initiative to upgrade certain gateway equipment, including new antennas and appliques, to improve our ability to pursue significant new opportunities to deploy our network assets as technologies and customer needs evolve and to ensure our network performance continues to excel as these opportunities increase demand on our capacity.

Customers

For our subscriber driven revenue, the specialized needs of our global customers span many industries. As of December 31, 2022, we had approximately 769,000 subscribers worldwide, principally within the following markets: recreation and personal; government; public safety and disaster relief; oil and gas; maritime and fishing; natural resources, mining and forestry; construction; utilities; animal tracking; and transportation. In response to Russia's invasion of Ukraine, during the first quarter of 2022, we disconnected satellite services to gateways in Russia that were operated by an independent gateway operator. Accordingly, approximately 25,000 subscribers that previously received satellite services through these gateways were removed from our subscriber count. Our subscriber count does not include our Partner's subscribers. Our system is able to offer our customers cost-effective communications solutions completely independent of cellular coverage. Although traditional users of wireless telephony and broadband data services have access to these services in developed locations, our customers often operate, travel and/or live in remote regions or regions with under-developed telecommunications infrastructure where these services are not readily available or are not provided on a reliable basis. Our top revenue-generating markets in the United States and Canada are government (including federal, state and local agencies), public safety and disaster relief, oil and gas, recreation and personal telecommunications. In recent years, the number of Commercial IoT devices on our network has increased significantly.

In addition to our subscribers, we also provide services to our Partner under the Service Agreements as discussed above in the Wholesale Capacity Services section. Our FCC license allows us to provide service over our network to up to 250 million users in the United States. Our subscriber count does not include our Partner's subscribers.

For the year ended December 31, 2022, our Partner under the Service Agreements was responsible for 24% of our revenue with no other customer responsible for more than 10% of our revenue. For the years ended December 31, 2021 and 2020, no one customer was responsible for more than 10% of our revenue. The loss of a large customer, such as our Partner under the Service Agreements, could have an adverse impact to our financial condition, results of operations and cash flows.

Duplex Two-Way Voice and Data Products

Mobile Voice and Data Satellite Communications Services and Equipment

We provide mobile voice and data services to a variety of commercial, government and individual customers for remote business continuity, recreational usage, safety, emergency preparedness and response and other applications. We offer our services for use only with equipment designed to work on our network. Subscribers typically pay an initial activation fee, a usage fee for a fixed or unlimited number of minutes, and fees for additional services such as voicemail, call forwarding, short messaging, email, data compression and internet access. We regularly monitor our service offerings and rate plans in accordance with customer demands and market changes and offer pricing plans such as bundled minutes, annual plans and unlimited plans.

Although we no longer manufacture the GSP-1600 and GSP-1700 phones, we continue to support services for these devices. Both phones include Qualcomm Incorporated's ("Qualcomm") patented CDMA technology, which we believe provides superior voice quality when compared to competitors' handsets.

Product Distribution

Our sales group is responsible for conducting direct sales with key accounts and for managing partner relationships. Customers also place orders through our existing sales force and through our direct e-commerce website.

SPOT Consumer Retail Products

The SPOT product family has been used to initiate over 9,000 rescues since its launch in 2007. SPOT delivers affordable and reliable satellite-based connectivity and real-time GPS tracking to hundreds of thousands of users, completely independent of cellular coverage.

We differentiate ourselves from other MSS providers by offering affordable, high-utility mobile satellite products that appeal to both businesses and the mainstream consumer market. We believe that we are the only vertically-integrated mobile satellite company. Our vertical integration results in decreased pre-production costs, greater quality assurance and shorter time to market for our retail consumer products.

We currently sell SPOT Gen4™, SPOT X® and SPOT Trace®. SPOT Gen4™ offers enhanced tracking features and is also water resistant. The product enables users to transmit predefined messages to a specific preprogrammed email address, phone or data device, including requests for assistance and “SOS” messages in the event of an emergency. SPOT X® is a two-way SPOT device with keyboard functionality allowing subscribers to send and receive SMS messages. SPOT X® connects to a smartphone via Bluetooth® wireless technology through the SPOT X® app to send and receive satellite messages. SPOT Trace® is a cost-effective, anti-theft and asset-tracking device. SPOT Trace® ensures cars, motorcycles, boats, ATVs, snowmobiles and other valuable assets are where they need to be, notifying owners via email or text anytime movement is detected, using 100% satellite technology to provide location-based messaging and emergency notification for on or off the grid communications.

We target our SPOT devices to recreational and commercial markets that require personal tracking, emergency location and messaging solutions that operate beyond the reach of terrestrial wireless and wireline coverage. Using our network and web-based mapping software, these devices provide consumers with the ability to trace a path geographically or map the location of individuals or equipment. SPOT products and services are available through our product distribution channels and our direct e-commerce website.

Product Distribution

We distribute and sell our SPOT products through a variety of distribution channels. We have distribution relationships with a number of "Big Box" retailers and other similar distribution channels, including Amazon, Bass Pro Shops, Cabela's, Camping World, REI, Sportsman's Warehouse, Academy and West Marine. We also sell SPOT products and services directly using our existing sales force and through our direct e-commerce website, www.findmespot.com.

Commercial IoT Transmission Products

Commercial IoT service is currently a one-way data service from an IoT device over the Globalstar System that can be used to track and monitor assets. Our subscribers use our Commercial IoT devices for a host of applications: to track assets, such as cargo containers and rail cars; to monitor utility meters; and to monitor oil and gas assets. At the heart of the Commercial IoT service is a demodulator and RF interface, called an appliqué, which is located at a gateway and an application server in our facilities. The appliqué-equipped gateways provide coverage over vast areas of the globe. The small size of the IoT devices makes them attractive for use in tracking asset shipments, monitoring unattended remote assets, trailer tracking and mobile security. We provide Commercial IoT services to customers operating in a variety of industries, including primarily government, transportation, construction, agriculture and forestry. Current users include various governmental agencies, such as the Federal Emergency Management Agency, U.S. Army, U.S. Air Force, National Oceanic and Atmospheric Administration, U.S. Forest Service and U.K. Ministry of Defence, as well as other organizations, such as BP, Shell and The Salvation Army.

We designed our Commercial IoT service to address demand in the market for a small and cost-effective solution for sending data, such as geographic coordinates, from assets or individuals in remote locations to a central monitoring station. Customers realize an efficiency advantage from tracking assets on a single global system as compared to several regional systems.

Satellite Transmitter Modules and Chips

We offer small satellite transmitter modules, such as the STX-3, ST-150 and ST100, and chips, such as our proprietary ASIC, which enable an integrator’s products to access our network. We have sales arrangements with major resellers to market our IoT services, including some value-added resellers that integrate our modules into their proprietary solutions designed to meet certain specialized niche market applications. The STX3 provides additional opportunities to integrate satellite connectivity into products used for vehicle and asset tracking, remote data reporting and data logger reporting that have limited size requirements. Affordable pricing, low power consumption and its small size make the STX3 a highly efficient device ready for integration in a wide variety of applications. The ST100, or ST100 Satellite Transmitter, is a small, lightweight and low power IoT board with embedded antennas. The ST100 offers a customizable approach to new commercial IoT product innovations and can be used by simply adding power, a mechanical enclosure and configuring the settings within the device firmware. For more advanced technical requirements, third parties can write their own firmware on the ST100 and utilize Bluetooth® wireless technology and the serial connector to expand the use of the board and integrate it with other devices or hardware. The ASIC provides a single chip one-way solution that can be embedded in a customer's own solution.

SmartOne Asset Managers

We also offer complete products that utilize the STX-3 transmitter module and our ASIC chip. Our Commercial IoT units, including the enterprise-grade SmartOne family of asset-ready tracking units, are used worldwide by industrial, commercial and government customers. These products provide cost-effective, low-power, ultra-reliable, secure monitoring that help solve a variety of security applications and asset tracking challenges. Partnering with existing third party technology providers, we are developing IoT products to connect existing and new users and accelerate deployment of an expanded Globalstar IoT product suite.

We also offer SmartOne Solar™, which is solar-powered and supports similar functionality to our SmartOne suite of products without the need to recharge batteries or line power the device over an expected life of up to ten years. These features will result in a longer field life than existing devices. Solar-powered devices also take advantage of our network's ability to support multiple billions of daily transmissions. The SmartOne Solar™ also has unparalleled safety and environmental certifications including ATEX, IECEx, North America (NEC & CEC), IP68/69K, and HERO.

Realm Enablement Suite

The Realm Enablement Suite is an innovative portfolio of satellite asset tracking hardware and software solutions featuring a powerful application enablement platform for processing smart data at the edge. With Realm, partners can accelerate new solutions to market with smart applications that generate an advanced level of telematics data. The Realm Enablement Suite includes Integrity 150, the first solar-powered, deployment-ready satellite asset tracking device with an application enablement platform; ST150M, a satellite modem module that drastically simplifies product development; and the Realm application enablement platform, which will offer tools and an extensive library for quickly accessing and developing smart applications at the edge for vertical-specific solutions.

Future Developments

We have other initiatives underway to expand our Commercial IoT offerings, including the development of a two-way reference design module, which we expect will complete our lineup of competitive product offerings. Operating on our Realm Enablement Suite, the two-way module and finished product will provide the fundamentals to effectively pursue sales opportunities with carriers, enterprises, large resellers, system integrators, and any party looking to extend their business models with satellite connectivity.

Product Distribution

The reseller channel for Commercial IoT equipment and service is comprised primarily of value-added resellers and commercial communications equipment companies that retain and bill clients directly, outside of our billing system. Many of our resellers specialize in niche vertical markets where high-use customers are concentrated. We expect that demand for our Commercial IoT products and services will increase as more applications are developed and deployed that utilize our technology.

Wholesale Capacity Services

Wholesale satellite capacity services include satellite network access and related services using our satellite spectrum and network of satellites and gateways.

Engineering and Other

We provide engineering services to assist certain customers in developing new applications to operate on our network and to enhance our ground network. These services include hardware and software designs to develop specific applications operating over our network, as well as the installation of gateways and antennas.

Spectrum and Regulatory Structure

We benefit from a worldwide allocation of radio frequency spectrum in the international radio frequency tables administered by the International Telecommunications Union (“ITU”). Access to this globally harmonized spectrum enables us to design satellites, networks and terrestrial infrastructure enhancements more cost effectively because the products and services can be deployed and sold worldwide. In addition, this broad spectrum assignment enhances our ability to capitalize on existing and emerging wireless and broadband applications.

Satellite Network

In the United States, the Federal Communications Commission ("FCC") has authorized us to operate between 1610-1618.725 MHz for “Uplink” communications from mobile earth terminals to our satellites and between 2483.5-2500 MHz for “Downlink” communications from our satellites to our mobile earth terminals. The FCC has also authorized us to operate our domestic gateways with our first and second-generation satellites in the 5091-5250 and 6875-7055 MHz bands.

We licensed and registered our second-generation satellites in France. We also obtained all authorizations necessary from the FCC to operate our domestic gateways with our second-generation satellites. In accordance with our authorization to operate the second-generation satellites, we completed the enhancements to the existing gateway operations in Aussaguel, France to include satellite operations and control functions. We have redundant satellite operation control facilities in Covington, Louisiana, Milpitas, California and Aussaguel, France.

During 2020, our French authorizations to provide MSS and operate the gateway in Aussaguel, France were renewed for an additional 10-year term. We have also filed applications in both Germany and France to operate a substantially larger satellite constellation than we have today; these applications have been accepted by the ITU and have an established date.

Terrestrial Authority for Globalstar's Licensed 2.4 GHz Spectrum

In December 2016, the FCC unanimously adopted a Report and Order permitting us to seek modification of our existing MSS licenses to provide terrestrial broadband services over 11.5 MHz of our licensed Mobile Satellite Services spectrum at 2483.5 to 2495 MHz throughout the United States of America and its Territories. In August 2017, the FCC modified Globalstar's MSS licenses, granting us authority to provide terrestrial broadband services over the 11.5 MHz portion of our licensed MSS spectrum. Specifically, the FCC modified our space station authorization and our blanket mobile earth station license to permit a terrestrial network using 11.5 MHz of our licensed mobile-satellite service spectrum.

In December 2018, we successfully completed the Third Generation Partnership Project (“3GPP”) standardization process for the 11.5 MHz of our licensed MSS spectrum terrestrially authorized by the FCC. The 3GPP designated the band as Band 53. Additionally, in March 2020, we announced that the 3GPP approved the 5G variant of our Band 53, which is known as n53. This new band class provides a pathway for our terrestrial spectrum to be integrated into handset and infrastructure ecosystems. Additional follow-on 3GPP specifications and approvals are expected in the future. During 2019, we executed a spectrum manager lease agreement with Nokia in order to permit Nokia to utilize Band 53 within its equipment domestically and have such equipment type-certified for sale and deployment.

In February 2021, Qualcomm Technologies announced its new Snapdragon X65 modem-RF System, which includes support for Band n53. By having global 5G band support for n53 in Qualcomm Technologies’ 5G solutions, our potential device ecosystem expands significantly to include the most popular smartphones, laptops, tablets, automated equipment and other IoT modules. In September 2022, we announced the Service Agreements, which require Partner to enable Band 53/n53 for use in cellular-enabled devices designated by Partner for use with the Services, subject to certain terms and conditions; we believe this inclusion significantly enhances the device ecosystem for Band 53/n53.

We believe our MSS spectrum position provides potential for harmonized terrestrial authority across many international regulatory domains and have been seeking approvals in various international jurisdictions. To date, we have received additional terrestrial authorizations in various countries including Brazil, Canada and South Africa, among others. We expect this global effort to continue for the foreseeable future while we seek additional terrestrial approvals to internationally harmonize our S-band spectrum across the entire 16.5 MHz authority for terrestrial mobile broadband services.

We expect our terrestrial authority will allow future partners to develop high-density dedicated networks using the TD-LTE and 5G protocols for private networks as well as the densification of cellular networks. We believe that our offering has competitive advantages over other conventional commercial spectrum allocations. Such other allocations must meet minimum population coverage requirements, which effectively prohibit the exclusive use of most carrier spectrum for dedicated small cell deployments. In addition, low frequency carrier spectrum is not physically well suited to high-density small cell topologies, and mmWave spectrum is subject to range and attenuation limitations. We believe that our licensed 2.4 GHz band holds physical, regulatory and ecosystem qualities that distinguishes it from other current and anticipated allocations, and that it is well positioned to balance favorable range, capacity and attenuation characteristics.

Industry

We compete in the MSS sector of the global communications industry. MSS operators provide voice and data services using a network of one or more satellites and associated ground facilities. Mobile satellite services are usually complementary to other forms of terrestrial communications services and infrastructure and are intended to allow for connectivity beyond the reach of cellular. Customers typically use satellite voice and data communications in situations where existing terrestrial wireline and wireless communications networks are impaired or do not exist.

Government organizations, military, natural disaster aid associations, event-driven response agencies and corporate security teams across the world depend on mobile and fixed voice and data communications services on a regular basis. Businesses with global operations require communications services when operating in remote locations. MSS users span the forestry, maritime, government, oil and gas, mining, leisure, emergency services, construction and transportation sectors, among others.

Over the past two decades, the global MSS market has experienced significant growth. Increasingly, better-tailored, improved technology products and services are creating new channels of demand. Growth in demand for mobile satellite services is driven by the declining cost of these services, the diminishing size and lower cost of the devices, as well as heightened demand by governments, businesses and individuals for ubiquitous global voice and data coverage. Growth in mobile satellite data services is driven by the rollout of new applications requiring higher bandwidth, as well as low-cost data collection and asset-tracking devices and technological improvements permitting integration of mobile satellite services over smartphones and other Wi-Fi enabled devices.

Communications industry sectors that are relevant to our business include:

- MSS, which provide customers with connectivity to mobile and fixed devices using a network of satellites and ground facilities;
- fixed satellite services, which use geostationary satellites to provide customers with voice and broadband communications links between fixed points on the earth's surface; and
- terrestrial services, which use a terrestrial network to provide wireless or wireline connectivity and are complementary to satellite services.

Additionally, the emergence of satellite to cellular technology has brought with it an increased number of satellite providers working in collaboration with mobile providers to extend smart phone messaging capability.

Within the major satellite sectors, fixed and MSS operators differ significantly from each other. Fixed satellite services providers, such as Intelsat Ltd., Eutelsat Communications and SES S.A., and aperture terminal companies, such as Hughes and Gilat Satellite Networks, are characterized by large, often stationary or "fixed," ground terminals that send and receive high-bandwidth signals to and from the satellite network for video and high speed data customers and international telephone markets. On the other hand, MSS providers, such as Globalstar, ORBCOMM, Inmarsat PLC (“Inmarsat”) and Iridium Communications Inc. (“Iridium”), focus more on voice and/or data services (including data services which track the location of remote assets such as shipping containers), where mobility or small-sized terminals are essential. As mobile satellite terminals begin to offer higher bandwidth to support a wider range of applications, we expect MSS operators will increasingly compete with fixed satellite services operators.

LEO systems reduce transmission delay compared to a geosynchronous system due to the shorter distance signals have to travel. In addition, LEO systems are less prone to signal blockage and, consequently, we believe provide a better overall quality of service.

We are also a provider of licensed wireless spectrum for use in terrestrial networks. As more and more devices are connected wirelessly and as their applications increase in bandwidth intensity, more terrestrial spectrum is required. In the United States, there are a number of other current licensed spectrum providers, including Anterix, Nextwave and Terrastar as well as various other licensed spectrum holders. We also provide an alternative to unlicensed spectrum used with Wi-Fi or lightly licensed spectrum like CBRS.

Each spectrum band is unique due to its propagation or ecosystem development; accordingly, some bands suit needs that others may not. Our spectrum band offers partners an international resource that has a robust and growing ecosystem.

Competition

The global communications industry is highly competitive. We currently face substantial competition from other service providers that offer a range of mobile and fixed communications options. Our most direct competition comes from other global MSS providers. Our largest global competitors are ORBCOMM, Inmarsat and Iridium. We compete primarily on the basis of coverage, quality, portability and pricing of services and products. In recent years, advancements in technology have also encouraged non-traditional companies to enter the market.

Inmarsat owns and operates a fleet of geostationary satellites. Due to its multiple-satellite geostationary system, Inmarsat's coverage area extends to and covers most bodies of water more completely than our system. Accordingly, Inmarsat is the leading provider of satellite communications services to the maritime sector. Inmarsat also offers global land-based and aeronautical communications services. We compete with Inmarsat in several key areas, particularly in our maritime markets. Inmarsat markets mobile handsets designed to compete with both Iridium’s mobile handset service and our GSP-1700 handset service.

Iridium owns and operates a fleet of low earth orbit satellites. Iridium provides voice and data communications to businesses, the United States government as well as foreign governments, non-governmental organizations and consumers. Iridium markets products and services that are similar to those marketed by us. Additionally, Garmin's inReach devices provide two-way tracking with SOS capabilities, Honeywell Global Tracking has a personal tracking unit that enables a smartphone with satellite tracking and messaging capabilities and Somewear has a satellite hotspot; these products work on Iridium's satellite network.

ORBCOMM owns and operates a fleet of low earth orbit satellites. ORBCOMM primarily provides asset tracking, monitoring and control solutions for its customers in the IoT market, which directly compete with our IoT products and services.

We compete with regional mobile satellite communications services in several markets. In these cases, our competitors serve customers who require regional, not global, mobile voice and data services, so our competitors present a viable alternative to our services in certain markets. All of these competitors operate geostationary satellites. Our principal regional MSS competitor in the Middle East and Africa is Thuraya.

Our direct to device service also faces competition from newly announced service providers, including SpaceX, Iridium and a number of new market entrants. While our service is currently the most robust service providing satellite capabilities to smartphones, other satellite service providers are expected to provide similar satellite services in the near-term to competitive smartphone devices.

In some of our markets, such as rural telephony, we compete directly or indirectly with very small aperture terminal ("VSAT") operators that offer communications services through private networks using very small aperture terminals or hybrid systems to target business users. VSAT operators have become increasingly competitive due to technological advances that have resulted in smaller, more flexible and less expensive terminals.

We compete indirectly with terrestrial wireline ("landline") and wireless communications networks. We provide service in areas that are inadequately covered by these ground systems. To the extent that terrestrial communications companies invest in underdeveloped areas, we will face increased competition in those areas.

Our SPOT products compete indirectly with Personal Locator Beacons ("PLBs"). A variety of manufacturers offer PLBs to industry specifications.

Our industry has significant barriers to entry, including the cost and difficulty associated with obtaining spectrum licenses and successfully building and launching a satellite and ground network. In addition to cost, there is a significant amount of lead-time associated with obtaining the required licenses, designing and building the satellite constellation and synchronizing the network technology.

For terrestrial spectrum opportunities, our primary competition is other licensed and unlicensed spectrum alternatives and, to a lesser extent, lightly licensed bands. Anterix, a licensed spectrum holder, is also a successful competitor for use cases that require low data over longer distances. We may be able to address certain of these use cases with spectrum provided by our satellite network.

Governmental Regulations

Please refer to Item 1A: Risk Factors - **"***Risks Related to Government Regulations"* for further discussion of the impact of governmental regulations on our business.

United States International Traffic in Arms Regulations and United States Export Administration Regulations

The United States International Traffic in Arms regulations under the United States Arms Export Control Act authorize the President of the United States to control the export and import of articles and services that can be used in the production of arms. The President has delegated this authority to the U.S. Department of State, Directorate of Defense Trade Controls. United States Export Administration Regulations enforced by the United States Bureau of Industry and Security, as well as regulations enforced by the United States Office of Foreign Assets Control regulate the export of certain products, services, and associated technical data. Among other things, these regulations limit the ability to export certain articles and related technical data to certain nations. Some information involved in the performance of our operations falls within the scope of these regulations. As a result, we may have to obtain an export authorization or restrict access to that information by international companies that are our vendors or service providers. We have received and expect to continue to receive export licenses for covered articles and technical data shared with approved parties outside the United States. We also are subject to restrictions related to transactions with persons subject to United States or foreign sanctions. These regulations, enforced by the United States Office of Foreign Assets Control, limit our ability to offer services and equipment to certain parties or in certain areas.

Environmental Matters

We are subject to various laws and regulations relating to the protection of the environment and human health and safety (including those governing the management, storage and disposal of hazardous materials). Some of our operations require continuous power supply. As a result, current and historical operations at our ground facilities, including our gateways, include storing fuels and batteries, which may contain hazardous materials, to power back-up generators. As an owner or operator of property and in connection with our current and historical operations, we could incur significant costs, including cleanup costs, fines, sanctions and third-party claims, as a result of violations of or in connection with liabilities under environmental laws and regulations.

Foreign Operations

We supply services and products to a number of foreign customers. Although most of our sales are denominated in U.S. dollars, we are exposed to currency risk for sales in Canada, Europe, Brazil and various other countries. In 2022, approximately 27% of our sales were generated in foreign countries, which generally are denominated in local currencies. See Note 2: Revenue in the Consolidated Financial Statements for additional information regarding revenue by country. For more information about our exposure to risks related to foreign locations, see Item 1A: Risk Factors - "*We face special risks by doing business in international markets and developing markets, including currency and expropriation risks, which could increase our costs or reduce our revenues in these areas."*

Intellectual Property

We hold various U.S. and foreign patents and patents pending that expire between 2023 and 2039. These patents cover many aspects of our satellite system, our global network and our user terminals. In recent years, we have reduced our foreign filings and decided to allow some previously granted foreign patents to lapse based on (a) the relative significance of the patent, (b) our assessment of the likelihood that someone would infringe in the foreign country, and (c) the probability that we could or would enforce the patent in light of the expense of filing and maintaining the foreign patent which, in some countries, is quite substantial. We continue to maintain all of the patents in the United States, Canada and Europe that we believe are important to our business. Our intellectual property is pledged as security for our obligations under our credit facility agreement we entered into in 2019 (the "2019 Facility Agreement").

Human Capital

As of December 31, 2022, we had 332 employees in fourteen countries around the world; 22 of our employees were located in Brazil and subject to collective bargaining agreements. We consider our relationship with our employees to be good. We are an equal opportunity employer and comply with labor and employment laws in all of the countries in which we operate.

Our compensation and benefit packages are designed to attract and retain employees and were developed using market research. We attract employees through various platforms, such as online job portals, recruiters, in-person job fairs, local universities and employee referrals. Salaries are competitive and based on job position, physical location, experience and skills. In addition to base salary, certain employees participate in longer-term incentive programs, which include awards of stock-based compensation. Our benefits packages include, but are not limited to, health insurance, a retirement plan, an employee stock purchase plan, flexible spending accounts, life and accidental injury insurance, long- and short-term disability, and paid time off for holidays, vacation, personal choice holidays, sick time and parental leave.

We also encourage training and development through Globalstar University, which is an online platform that hosts a variety of training programs ranging from leadership and management programs to technical, on the job training. Employee engagement is also important for us, and includes an interactive wellness program, corporate communications and employee surveys. Our commitment to diversity and inclusion is part of our worldwide culture, which our employees confirmed in our most recent employee survey as "Diversity and Inclusion" continues to be one of the highest rated culture categories.

In response to COVID-19 mitigation measures, we remain focused on the health and safety of our employees. We continue to support hybrid working arrangements and accommodate flexible work schedules, as needed.

Seasonality

Usage on the network and, to some extent, sales are subject to seasonal and situational changes. April through October are typically our peak months for usage-based service revenues and equipment sales. We also experience event-driven revenue fluctuations in our business. Most notably, emergencies, natural disasters and other sizable projects where satellite-based communications devices are the only solution may generate an increase in revenue. In the consumer area, SPOT devices sales are influenced by outdoor and leisure activity opportunities, as well as our holiday promotions.

Services and Equipment

Sales of services accounted for approximately 89%, 85% and 88% of our total revenues for 2022, 2021, and 2020, respectively. We also sell the related voice and data equipment to our customers, which accounted for approximately 11%, 15% and 12% of our total revenues for 2022, 2021, and 2020, respectively.

Global Chip Shortage

In recent years, the global chip shortage has negatively impacted our manufacturing processes, including causing delays in and increased costs of sourcing certain component parts. We have mitigated some of the impact of these shortages through strategic changes in our manufacturing process and supply chain.

Additional Information

We file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission (the "SEC"). The SEC maintains an internet site that contains annual, quarterly and current reports, proxy and information statements and other information that issuers (including Globalstar) file electronically with the SEC. Our electronic SEC filings are available to the public at the SEC's internet site, *www.sec.gov*.

We make available free of charge financial information, news releases, SEC filings, including our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to these reports on our website at *www.globalstar.com* as soon as reasonably practical after we electronically file such material with, or furnish it to, the SEC. The documents available on, and the contents of, our website are not incorporated by reference into this Report.

Item 1A. Risk Factors

You should carefully consider the risks described below, as well as all of the information in this Report and all of the other reports we file from time to time with the SEC, in evaluating and understanding us and our business. Additional risks not presently known or that we currently deem immaterial may also impact our business operations and the risks identified in this Report may adversely affect our business in ways we do not currently anticipate. Our business, financial condition or results of operations could be materially adversely affected by any of these risks.

Risks Related to Our Business

Revenue under the Service Agreements constitutes a substantial portion of our current revenues, and there is no assurance that we will receive the revenue expected under the Service Agreements.

The Service Agreements contributed approximately 24% of our revenue for the year ended December 31, 2022. The Service Agreements impose a number of substantial obligations on us, provide for certain of our fees to be payable only upon satisfaction of the conditions therein and are terminable by each party. It is possible that we may fail to meet these obligations, that the conditions to the payment of such fees may not be satisfied, that our Partner's products that employ the Services will not succeed or that the Service Agreements may be terminated. If any of these events were to occur, we would not receive the revenues we currently expect to receive under the Service Agreements, which could materially and adversely affect our business and results of operations.

If we experience operational disruptions with respect to our gateways or operations center, we may not be able to provide service to our customers.

Our satellite network traffic is supported by our gateways located around the globe. We operate our satellite constellation from our Network Operations Control Centers at three locations (France, California and Louisiana) to provide geo-redundancy and ongoing coverage. Our gateway facilities are subject to the risk of significant malfunctions or catastrophic loss due to unanticipated events and would be difficult to replace or repair and could require substantial lead-time to do so. In North

America, we have implemented contingency coverage which allows neighboring gateways to provide services in the event of a gateway failure. Material changes in the operation of these facilities may be subject to prior FCC approval, and the FCC might not give such approval or may subject the approval to other conditions that could be unfavorable to our business. Our gateways and operations centers may also experience service shutdowns or periods of reduced service in the future as a result of equipment failure, delays in deliveries, regulatory issues or routine system testing. Equipment failures would impede our ability to provide service to our customers, which could have a material impact on our business.

The actual orbital lives of our satellites may be shorter than we anticipate, and we may be required to reduce available capacity on our satellite network prior to the end of their orbital lives.

Although we designed our second-generation satellites to provide commercial service over a 15-year life, we can provide no assurance as to whether any or all of them will continue in operation for their full 15-year design life. A number of factors will affect the actual commercial service lives of each satellite, including:

- the amount of propellant used in maintaining the satellite's orbital location or relocating the satellite to a new orbital location (and, for a newly-launched satellite, the amount of propellant used during orbit raising following launch);
- the durability and quality of its construction;
- the performance of its components;
- hazards and conditions in space such as solar flares and space debris;
- operational considerations, including operational failures and other anomalies; and
- changes in technology which may make all or a portion of our satellite fleet obsolete.

It is possible that the actual orbital lives of one or more of our existing satellites may be shorter than originally anticipated. Further, it is possible that the total available payload capacity of a satellite may need to be reduced prior to the satellite reaching its end-of-orbital life. We periodically review the expected orbital life of each of our satellites using current engineering data. A reduction in the orbital life of any of our satellites could result in a reduction of revenue, the recognition of an impairment loss and an acceleration of capital expenditures. The potential impact on our revenue from a reduction in the orbital life of one or more satellites may vary depending on the satellite's orbital location as well as the type of device and service a customer is using.

Our satellites may collide with space debris which could adversely affect the performance of our constellation.

Our ability to maneuver our satellites to avoid potential collisions with space debris is limited by, among other factors, uncertainties and inaccuracies in the projected orbit location of, and predicted conjunctions with, debris objects tracked and cataloged by the U.S. government. Some space debris is too small to be tracked, and therefore its orbital location is completely unknown. Debris that cannot be tracked is still large enough to potentially cause severe damage to or failure of one of our satellites should a collision occur. If our constellation experiences satellite collisions with space debris, our service could be impaired. Any such collision could potentially expose us to significant losses.

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

Natural disasters could damage or destroy our ground stations and disrupt service to our customers. In addition, the collateral effects of disasters such as flooding may impair, damage or destroy our ground equipment. If a natural disaster were to impair, damage or destroy any of our ground facilities, we may be rendered unable to provide service to our customers in the affected area, either temporarily or indefinitely. Even if our gateways are not affected by natural disasters, our service could be disrupted if a natural disaster damages the public switch telephone network, terrestrial wireless networks or our ability to connect to the public switch telephone network or terrestrial wireless networks. Additionally, there are inherent dangers and risk associated with our satellite operations, including the risk of increased radiation. Any such failures or service disruptions could harm our business and results of operations.

The implementation of our business plan and our ability to generate income from operations assume we are able to maintain a healthy constellation and ground network capable of providing commercially acceptable levels of coverage and service quality, which are contingent on a number of factors.

Our products and services are subject to the risks inherent in relying on a large-scale, complex telecommunications system employing advanced technology. Any disruption to our satellites, services, information systems or telecommunications infrastructure could result in degrading or disrupting services to our customers for an indeterminate period of time.

Satellites utilize highly complex technology and operate in the harsh environment of space and therefore are subject to significant operational risks while in orbit. Our satellites may experience temporary outages or otherwise may not be fully functioning at any given time. There are some remote tools we use to remedy certain types of problems affecting the performance of our satellites, but the physical repair of satellites in space is not feasible. We do not insure our satellites against in-orbit failures after an initial period of six months, whether the failures are caused by internal or external factors. In-orbit failure may result from various causes, including component failure, solar array failures, telemetry transmitter failures, loss of power or fuel, inability to control positioning of the satellite, solar or other astronomical events, including solar radiation and flares, and collision with space debris or other satellites. These failures are commonly referred to as anomalies. Some of our satellites have had malfunctions and other anomalies in the past and may have anomalies in the future. Anomalies may occur, for reasons described above or arising from the failure of other systems or components, and intrasatellite redundancy may not be available upon the occurrence of such anomalies. There can be no assurance that, in these cases, it will be possible to restore normal operations. Where service cannot be restored, the failure could cause the satellite to have less capacity available for service, to suffer performance degradation or to cease operating prematurely, either in whole or in part. We cannot guarantee that we could successfully develop and implement a solution if one of these anomalies occurs.

In addition, satellites are particularly vulnerable to loss and malfunction at the time they are launched and deployed into orbit, and some of our competitors have experienced catastrophic losses of substantial numbers of satellites in connection with launch and deployment. While we typically obtain launch insurance to mitigate the risk of such a loss, such insurance would not cover all our economic losses if we experienced such an event, and there would be a substantial delay before we could obtain satellites to replace the ones we lost. Accordingly, a loss of a significant number of our new satellites at launch or deployment could adversely affect our ability to continue to provide our existing satellite services and may cause us to lose opportunities to use our constellation to provide new services. Additionally, human operators may execute improper implementation commands that may negatively impact a satellite's performance.

If a satellite fails prior to the end of its estimated useful life, we record an impairment charge in our statement of operations to reduce the remaining net book value of that satellite to zero; any such impairment charges could depress our net income (or increase our net loss) for the period in which the failure occurs.

The implementation of our business plan depends on increased demand for wireless communications services via satellite (including IoT applications) and via terrestrial mobile broadband networks, both for our existing services and products and for new services and products.

We plan to introduce new products and services that work over our network as well as terrestrial mobile broadband services. However, demand for wireless communication services may not grow, or may decrease, either generally or in particular geographic markets, for particular types of services or during particular time periods. A lack of demand could impair our ability to sell our services, could exert downward pressure on prices, or both. This, in turn, could decrease our revenue and profitability and adversely affect our ability to increase our revenue and profitability over time.

The success of our business plan will depend on a number of factors, including but not limited to:

- our ability to maintain the health, capacity and control of our satellites;
- our ability to maintain the health of our ground network;
- our ability to influence the level of market acceptance and demand for our products and services;
- our ability to introduce new products and services that meet this market demand;
- our ability to retain current customers and obtain new customers;
- our ability to obtain additional business using our existing and future spectrum authority both in the United States and internationally;
- our ability to control the costs of developing an integrated network providing related products and services, as well as our future terrestrial mobile broadband services;
- our ability to market successfully our products and services;
- our ability to develop and deploy innovative network management techniques to permit mobile devices to transition between satellite and terrestrial modes;
- the cost and availability of user equipment that operates on our network;
- the effectiveness of our competitors in developing and offering similar products and services;
- our ability to successfully predict market trends;
- our ability to hire and retain qualified executives, managers and employees;
- our ability to provide attractive service offerings at competitive prices to our target markets; and
- our ability to raise additional capital on acceptable terms when required.

Rapid and significant technological changes in the satellite communications industry may impair our competitive position and require us to make significant capital expenditures, which may require additional capital that has not been arranged.

The space and communications industries are subject to rapid advances and innovations in technology. New technology could render our system obsolete or less competitive by satisfying consumer demand in more attractive ways or through the introduction of incompatible standards. Particular technological developments that could adversely affect us include the deployment by our competitors of new satellites with greater power, flexibility, efficiency or capabilities, as well as continuing improvements in terrestrial wireless technologies. We must continue to keep up with technological changes and remain competitive. Customer acceptance of the services and products that we offer will continually be affected by the technology in our product and service offerings relative to competitive offerings. New technologies may be protected by patents and therefore may not be available to us. We expect to face competition from companies using new technologies and new satellite systems.

The hardware and software we utilize in operating our first-generation gateways were designed and manufactured over 20 years ago and portions have deteriorated. This original equipment may become less reliable as it ages and will be more difficult and expensive to service. It may be difficult or impossible to obtain all necessary replacement parts for the hardware before the new equipment and software is fully deployed. Some of the hardware and software we use in operating our gateways are significantly customized and tailored to meet our requirements and specifications and could be difficult and expensive to service, upgrade or replace. Although we maintain inventories of some spare parts, it nonetheless may be difficult, expensive or impossible to obtain replacement parts for our hardware due to a limited number of parts being manufactured to our requirements and specifications. In addition, our business plan contemplates updating or replacing some of the hardware and software in our network as technology advances, but the complexity of our requirements and specifications may present us with technical and operational challenges that complicate or otherwise make it expensive or infeasible to carry out such upgrades and replacements. If we are not able to suitably service, upgrade or replace our equipment, it could harm our ability to provide our services and generate revenue.

We face intense competition in all of our markets, which could result in a loss of customers, lower revenues and difficulty entering new markets.

Satellite-based Competitors

There are currently at least four other MSS operators providing services similar to ours on a global or regional basis: Iridium, Thuraya, Inmarsat and ORBCOMM Inc. Recently, the FCC partially approved SpaceX's application to launch a portion of its satellite constellation. The provision of satellite-based products and services is subject to downward price pressure when the capacity exceeds demand or as new competitors enter the marketplace with competitive pricing strategies. We also face competition with respect to network coverage and market share in specialized industries, such as maritime and governmental.

Other providers of satellite-based products could introduce their own products similar to our SPOT, Commercial IoT or Duplex products, which may materially adversely affect our business plan and sales volume. In addition, we may face competition from new competitors or new technologies. Many companies target the same customers, and we may not be able to successfully retain our existing customers or attract new customers. As a result, we may not grow our customer base and revenue.

Additionally, in connection with the Service Agreements, our direct to device service, also faces competition from other satellite service providers that are expected to provide similar satellite services to competitive smartphone devices.

Terrestrial Competitors

In addition to our satellite-based competitors, terrestrial wireless voice and data service providers are continuing to expand into rural and remote areas, particularly in less developed countries. They provide the same general types of services and products that we provide through our satellite-based system. Many of these companies have greater resources, more name recognition and newer technologies than we do. Industry consolidation could adversely affect us by increasing the scale or scope of our competitors and thereby making it more difficult for us to compete. We could lose market share and revenue as a result of increasing competition from land-based communication service providers.

Although satellite communications services and ground-based communications services are not identical, the two compete in similar markets with similar services. Consumers may perceive cellular voice communication products and services as cheaper and more convenient than satellite-based products and services.

Terrestrial Broadband Network Competitors

We also expect to compete with a number of other satellite companies that plan to develop terrestrial networks that utilize their MSS spectrum. DISH Network received FCC approval to offer terrestrial wireless services over the MSS spectrum that previously belonged to TerreStar and ICO Global. Furthermore, Ligado Networks (formerly LightSquared) also received FCC approval to build out a wireless network utilizing its MSS spectrum. Any of these competitors could deploy terrestrial mobile broadband networks before we do, could combine with existing terrestrial networks that provide them with greater financial or operational flexibility than we have or could offer wireless services, including mobile broadband services, that customers prefer over ours.

Other Spectrum Owners

In the United States, our terrestrial spectrum efforts will compete with other terrestrial spectrum holders including Anterix, Nextwave and holders to CBRS licenses. The government may also unlock new spectrum bands.

Uncertain global macro-economic and political conditions could materially adversely affect our results of operations and financial condition.

Our results of operations are materially affected by economic and political conditions in the United States and internationally, including inflation, deflation, interest rates, recession, availability of capital, energy and commodity prices, trade laws and the effects of governmental initiatives to manage economic conditions. Current or potential customers may delay or decrease spending on our products and services as their business and/or budgets are impacted by economic conditions. The inability of current and potential customers to pay us for our products and services may adversely affect our earnings and cash flows. In addition, deterioration of conditions in worldwide credit markets could limit our ability to obtain financing to fund our operations and capital expenditures.

The current invasion of Ukraine by Russia has escalated tensions among the United States, the North Atlantic Treaty Organization (“NATO”) and Russia. The United States and other NATO member states, as well as non-member states, have announced new sanctions against Russia and certain Russian banks, enterprises and individuals. These and any future additional sanctions and any resulting conflict between Russia, the United States and NATO countries could have an adverse impact on our current operations.

Further, such invasion, ongoing military conflict, resulting sanctions and related countermeasures by NATO states, the United States and other countries are likely to lead to market disruptions, including significant volatility in commodity prices, credit and capital markets, as well as supply chain interruptions for equipment, which could have an adverse impact on our operations and financial performance.

Volatility in the financial markets may impede our ability to access capital markets and may adversely affect our financial condition.

Our Service Agreements with Partner require us to raise additional financing, such as to refinance our 2019 Facility Agreement. Turmoil in the capital markets, including the tightening of credit and increased interest rates, have impacted, and may continue to impact in the future, our ability to raise financing on terms and at a cost favorable to the Company. We are, and may be again in the future, required to raise capital during a weak economy, and have little flexibility to wait for more favorable terms or economic conditions. We are likely to face higher borrowing costs, less available capital, more stringent terms and tighter covenants. Such unfavorable market conditions could have an adverse impact on our ability to fund our operations and capital expenditures in the future, including our obligations under the Service Agreements and the satellite procurement agreement with MDA. Any adverse change in the terms of our financing, including increased costs, could have a negative impact on our financial condition.

Lack of availability of components from the electronics industry, required in our retail products, gateways and satellites could delay or adversely impact our operations.

We rely upon the availability of components, materials and component parts from the electronics industry. The electronics industry is subject to occasional shortages in parts availability depending on fluctuations in supply and demand. Industry shortages may result in delayed shipments of materials or increased prices, or both. As a consequence, elements of our operation which use electronic parts, such as our retail products, gateways and satellites, could be subject to disruptions, cost increases or both. Recent disruptions in the global supply chain have limited our ability to procure component parts timely and at reasonable prices. During 2022, supply chain disruptions and production issues negatively impacted our ability to sell our most popular SPOT and Commercial IoT products. We continue to fulfill customer orders, including the sell-through of safety stock, and maintain adequate margins on subscriber equipment sales as well as maintain our gateways; however the continued impact of global component part shortages is unknown and may continue to adversely impact our business, financial condition and results of operations.

Our business is capital intensive. We may not be able to raise adequate capital to finance our business strategies, or we may be able to do so only on terms that significantly restrict our ability to operate our business.

Implementation of our longer-term business strategy requires a substantial outlay of capital. As we pursue business strategies and seek to respond to developments in our business and opportunities and trends in our industry, our actual capital expenditures may differ from our expected capital expenditures. There can be no assurance that we will be able to satisfy our capital requirements in the future. In addition, if one of our satellites failed unexpectedly, there can be no assurance of insurance recovery for our losses or the timing thereof, and we may need to obtain additional financing to replace the satellite. When we determine we need to obtain additional funds through external financing and are unable to do so on terms and conditions we determine favorable to us or at all, we may be prevented from fully implementing our business strategy.

If we do not develop, acquire and maintain proprietary information and intellectual property rights, it could limit the growth of our business and reduce our market share.

Our business depends on technical knowledge, and we base our business plan in part on our ability to keep up with new technological developments and incorporate them in our products and services. We own or have the right to use our patents, work products, inventions, designs, software, systems and similar know-how. Our proprietary information may be disclosed to others, or others may independently develop similar information, systems and know-how.

Protection of our information, systems and know-how may result in litigation, the cost of which could be substantial. Third parties may assert claims that our products or services infringe on their proprietary rights. Any such claims, if made, may prevent or limit our sales of products or services or increase our costs. Defending intellectual property suits is both costly and time-consuming and, even if ultimately successful, may divert management's attention from other business concerns. An adverse determination in litigation to which we may become a party could, among other things:

- subject us to significant liabilities to third parties, including treble damages;
- require disputed rights to be licensed from a third party for royalties that may be substantial;
- require us to cease using technology that is important to our business; or
- prohibit us from selling some or all of our products or offering some or all of our services.

We face special risks by doing business in international markets and developing markets, including currency and expropriation risks, which could increase our costs or reduce our revenues in these areas.

Although our most economically important geographic markets currently are the United States and Canada, we have substantial markets for our mobile satellite services in, and our business plan includes, developing countries or regions that are underserved by existing telecommunications systems, such as rural Brazil, Central America, Argentina and Africa. Developing countries are more likely than industrialized countries to experience market, currency and interest rate fluctuations and high inflation. In addition, these countries present risks relating to government policy, price, wage and exchange controls, social instability, expropriation and other adverse economic, political and diplomatic conditions.

Conducting operations outside the United States involves numerous special risks and expanding our international operations would increase these risks. These risks include, but are not limited to:

- difficulties in penetrating new markets due to established and entrenched competitors;
- difficulties in developing products and services that are tailored to the needs of local customers;
- lack of local acceptance or knowledge of our products and services;
- unavailability of or difficulties in establishing relationships with distributors;
- significant investments, including the development and deployment of gateways in countries that require them to connect the traffic coming to and from their territory;
- instability of international economies and governments;
- changes in laws and policies affecting trade and investment in other jurisdictions;
- noncompliance with the Foreign Corrupt Practices Act ("FCPA"), UK Bribery Act, sanctions laws and export controls;
- exposure to varying legal standards in other jurisdictions, including intellectual property protection and other similar laws and regulations;
- difficulties in obtaining required regulatory authorizations;

- difficulties in enforcing legal rights in other jurisdictions;
- variations in local domestic ownership requirements;
- requirements that operational activities be performed in-country;
- changing and conflicting national and local regulatory requirements; and
- uncertainty in foreign currency exchange rates and exchange controls.

These risks could affect our ability to compete successfully and expand internationally. To the extent that the prices for our products and services are denominated in U.S. dollars, any appreciation of the U.S. dollar against other currencies will increase the cost of our products and services to our international customers and, as a result, may reduce the competitiveness of our international offerings and make it more difficult for us to grow internationally. Limited availability of U.S. currency in some local markets or governmental controls on the export of currency may prevent our customers from making payments in U.S. dollars or delay the availability of payment due to foreign bank currency processing and controls.

Our operations involve transactions in a variety of currencies. Sales denominated in foreign currencies involve primarily the Canadian dollar, the euro and the Brazilian real. Accordingly, our operating results may be significantly affected by fluctuations in the exchange rates for these currencies. Approximately 27% and 31% of our total revenue was to customers primarily located in Canada, Europe, Central America, and South America during 2022 and 2021, respectively. Our results of operations for 2022 and 2021 included net losses of approximately $6.6 million and net losses of $6.3 million, respectively, on foreign currency transactions. We may be unable to offset unfavorable currency movements as they adversely affect our revenue and expenses. Our inability to do so could have a substantial negative impact on our operating results and cash flows.

Our global operations expose us to trade and economic sanctions, other restrictions, liabilities and exposure to penalties imposed by the United States, the European Union and other governments and organizations.

The U.S. Departments of Justice, Commerce, State and Treasury and other federal agencies and authorities have a broad range of civil and criminal penalties they may seek to impose against corporations and individuals for violations of economic sanctions laws, export control laws, FCPA and other federal statutes and regulations, including those established by the Office of Foreign Assets Control ("OFAC"). Under these laws and regulations, as well as other anti-corruption laws, anti-money-laundering laws, export control laws, customs laws, sanctions laws and other laws governing our operations, various government agencies require export licenses. They may seek to impose modifications to business practices, including cessation of business activities in sanctioned countries or with sanctioned persons or entities and modifications to compliance programs, which may increase compliance costs, and may subject us to fines, penalties and other sanctions. A violation of these laws or regulations could adversely impact our business, results of operations and financial condition.

Although we have implemented policies and procedures in these areas, we cannot assure you that our policies and procedures are sufficient or that directors, officers, employees, representatives, distributors, consultants, other partners, vendors, customers or subscribers have not engaged and will not engage in conduct for which we may be held responsible. We cannot assure you that our business partners have not engaged and will not engage in conduct that could materially affect their ability to perform their contractual obligations to us or result in us being held liable for such conduct. Violations of the FCPA, OFAC restrictions or other export control, anti-corruption, anti-money-laundering and anti-terrorism laws or regulations may result in severe criminal or civil sanctions, and we may be subject to other liabilities, which could have a material adverse effect on our business, financial condition, cash flows and results of operations.

Our indebtedness may adversely affect our cash flow and our ability to operate our business, including our ability to incur additional indebtedness.

Our principal near-term liquidity requirements include primarily funding our operating costs, capital expenditures, including repayment of amounts being financed through MDA, and future amounts expected to be incurred, under the satellite procurement agreement; repayment of the remaining principal balance due under the 2019 Facility Agreement; and interest and dividends due on any debt or preferred equity instruments outstanding. Our principal sources of liquidity during 2022 included cash on hand ($32.1 million), cash flows from operations and vendor financing. Our principal sources of liquidity over the next twelve months are expected to include cash on hand, cash flows from operations, prepayments under the Service Agreements (discussed in *Recent Developments* below) and funds from a debt or equity financing that has not yet been arranged.

Our operating expenses for the twelve-month period ended December 31, 2022 were $369.5 million, which included nonrecurring, noncash impairment charges of $175.1 million as well as noncash depreciation, amortization and accretion of $93.9 million.

Another source of liquidity may include proceeds from the exercise of warrants under the Service Agreements. We also expect sources of liquidity to include funds from other debt or equity financings that have not yet been arranged; we are actively pursuing a new financing arrangement to refinance amounts due under the 2019 Facility Agreement.

On a longer-term basis, our liquidity requirements also include debt service obligations. We cannot provide assurance that we will not experience a liquidity shortfall in the short or long-term.

As of December 31, 2022, the principal balance of our debt obligations was $203.0 million, consisting of $143.2 million under the 2019 Facility Agreement and $59.8 million under our vendor financing arrangement. In February 2023, we executed a prepayment agreement under the Service Agreements, whereby Partner is obligated, subject to certain conditions, to fund an amount up to approximately $252.0 million (to be adjusted as required), which is required to be recouped by Globalstar beginning at the earlier of phase two service launch or the third quarter of 2025.

Our indebtedness could restrict us from making strategic acquisitions by limiting our ability to obtain additional financing for working capital, capital expenditures, product development, debt service requirements, acquisitions and general corporate purposes. Our indebtedness could restrict us from paying dividends to our shareholders. It could limit our flexibility in planning for, or reacting to, changes in our business or industry, placing us at a competitive disadvantage compared to competitors who are not as highly leveraged as us and who, therefore, may be able to take advantage of opportunities that our leverage prevents us from exploiting. Additionally, even though our current debt agreements place limits on our ability to incur additional debt, in the future we may incur additional debt which could further exacerbate these risks.

We may also access equity and debt capital markets from time to time or refinance our debt obligations with the intent to improve the terms of our indebtedness; the availability of such financing may be unavailable on terms and conditions we determine favorable to us or at all.

Restrictive covenants in our 2019 Facility Agreement and Service Agreements may limit our operating and financial flexibility and our inability to comply with these covenants could have significant implications.

Our 2019 Facility Agreement and prepayment agreement associated with the Service Agreements contain a number of significant restrictions and covenants. See Note 6: Long-Term Debt and Other Financing Arrangements in our Consolidated Financial Statements in Part II, Item 8 of this Report for further discussion of our debt covenants. Complying with these restrictive covenants, including financial and non-financial covenants, as well as those that may be contained in any agreements governing future indebtedness, may impair our ability to finance our operations or capital needs or to take advantage of favorable business opportunities. Our 2019 Facility Agreement includes a limitation on expenditures in connection with spectrum rights, which may prohibit us from making certain expenditures that we consider accretive to our business and would otherwise make. Our ability to comply with these covenants will depend on our future performance, which may be affected by events beyond our control. We have received waivers from our lenders in the past; however, we may not be successful in obtaining waivers from the remaining lender in the future, which may result in noncompliance with restrictions and covenants. Our failure to comply with these covenants would be an event of default. An event of default under the 2019 Facility Agreement or the Service Agreements would permit the lender to accelerate the indebtedness under these agreements. That acceleration would permit holders of our obligations under other agreements that contain cross-acceleration provisions to accelerate our obligations to them. See Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations – *Liquidity and Capital Resources* of this Report for further discussion.

Our networks and those of our third-party service providers and customers may be vulnerable to unauthorized or unlawful access. Our use of personal information could give rise to costs and liabilities arising from developing data privacy laws.

Our network and those of our third-party service providers and our customers may be vulnerable to unauthorized access, attacks, malware, data breaches and other security problems. Persons who circumvent security measures could wrongfully obtain or use information from such networks or cause interruptions, delays or malfunctions in our operations. A data breach or network disruption could harm our reputation, cause demand for our products and services to fall or compromise our ability to pursue our business plans. A number of significant, widespread security breaches have compromised companies and governmental agencies. In some cases, these breaches originated from outside the United States. We may be required to expend significant resources to protect against the threat of security breaches or to alleviate problems, including reputational harm and litigation, caused by any breaches. In addition, our customer contracts may not adequately protect us against liability to third parties with whom our customers conduct business.

We collect and store data, including our customers' personal information. In jurisdictions around the world, personal information is increasingly becoming the subject of extensive legislation and regulations to protect consumers’ privacy and security, such as the EU's General Data Protection Regulation that became effective in 2018. The interpretation of privacy and data protection laws and regulations regarding the collection, storage, transmission, use and disclosure of such information in some jurisdictions is unclear and ever evolving. These laws may be interpreted and applied differently from country to country and in a manner that is not consistent with our current data protection practices. Complying with these varying international requirements could cause us to incur additional costs or change our business practices. Our services are accessible in many foreign jurisdictions, and some of these jurisdictions may claim that we are required to comply with their laws, even where we have no local entity, employees or infrastructure. We could be forced to incur significant expenses if we were required to modify our products, services or existing security and privacy procedures in order to comply with new or expanded regulations across numerous jurisdictions. In addition, we could face liability to end users alleging that their personal information is not collected, stored, transmitted, used or disclosed appropriately or in accordance with our privacy policies or applicable laws, including claims and litigation resulting from such allegations. Any failure on our part to protect information pursuant to applicable regulations could result in a loss of user confidence, reputation and customers, which could materially impact our results of operations and cash flows.

Due to fluctuations in the insurance market, we may be unable to obtain and maintain our insurance coverages, and the insurance we obtain may not cover all risks we undertake. As a result, we may incur material uninsured or under-insured losses.

The price, terms and availability of insurance have fluctuated significantly since we began offering commercial satellite services. The cost of obtaining insurance can vary as a result of either satellite failures or general conditions in the insurance industry. Rising premiums on insurance policies could increase our costs. In addition to higher premiums, insurance policies may provide for higher deductibles, shorter coverage periods and additional policy exclusions. Our insurance could become more expensive and difficult to maintain and may not be available in the future on commercially reasonable terms, if at all. Our failure to maintain sufficient insurance could also create an event of default under our debt agreements. Our insurance may not adequately cover losses incurred arising from claims brought against us or otherwise, which could be material.

Product Liability Insurance and Product Replacement or Recall Costs

We may be subject to product liability and product recall claims if any of our products and services are alleged to have caused injury to persons or damage to property. If any of our products prove to be defective, we may need to recall and redesign them. In addition, any claim or product recall that results in significant adverse publicity may negatively affect our business, financial condition or results of operations. We do not maintain any product recall insurance, so any product recall we are required to initiate could have a significant impact on our financial position, results of operations or cash flows. We investigate potential quality issues as part of our ongoing effort to deliver quality products to our customers.

Because consumers may use SPOT products and services in isolated or dangerous locations, users of our devices who suffer injury or death may seek to assert claims against us alleging failure of the device to facilitate timely emergency response. We cannot assure investors that any legal disclaimers will be effective or insurance coverage will be sufficient to protect us from material losses.

General Liability Insurance In-Orbit Exposures

Our liability policy, covers amounts up to €70 million per occurrence (with a €70 million annual limit) that we and other specified parties may become liable to pay for bodily injury and property damages to third parties related to processing, maintaining and operating our satellite constellation. Our current policy has a one-year term, which expires in October 2023. Our current in-orbit liability insurance policy contains, and we expect any future policies would likewise contain, specified exclusions and material change limitations customary in the industry. These exclusions may relate to, among other things, losses resulting from in-orbit collisions, acts of war, insurrection, terrorism or military action, government confiscation, strikes, riots, civil commotions, labor disturbances, sabotage, unauthorized use of the satellites and nuclear or radioactive contamination, as well as claims directly or indirectly occasioned as a result of noise, pollution, electrical and electromagnetic interference or interference with the use of property.

Our in-orbit insurance does not cover losses that might arise as a result of a satellite failure, other operational problems affecting our constellation, or damage resulting from de-orbiting a satellite. As a result, a failure of one or more of our satellites or the occurrence of equipment failures, collision damage, or other related problems that may result during the de-orbiting process could constitute an uninsured loss and could materially harm our financial condition.

The effect of an epidemic or pandemic, such as the COVID-19 pandemic, could have an adverse impact on our operations and the operations of our customers and may have a material adverse impact on our financial condition and results of operations.

An epidemic or pandemic could significantly disrupt our operations, including, but not limited to, our workforce, supply chain, regulatory processes and market demand of our products. An epidemic or pandemic could also significantly impact our customers, including their demand for and ability to pay for our services and equipment. The extent to which COVID-19 could continue to impact our operations and financial condition will depend on future developments that are highly uncertain and cannot be predicted.

We operate in many tax jurisdictions, and changes in tax rates or adverse results of tax examinations could materially increase our costs.

We operate in various U.S. and foreign tax jurisdictions. The process of determining our anticipated tax liabilities involves many calculations and estimates which are inherently complex. Our tax obligations are subject to review and possible challenge by the taxing authorities of these jurisdictions, such as the ongoing income tax return audit being conducted by the Canada Revenue Agency of our Canadian subsidiary. If taxing authorities were to successfully challenge our current tax positions, or if we changed the manner in which we conduct certain activities, we could become subject to material, unanticipated tax liabilities. We may also become subject to additional tax liabilities as a result of changes to tax laws in any of our applicable tax jurisdictions, which in certain circumstances could have a retroactive effect.

We are exposed to trade credit risk in the ordinary course of our business activities.

We are exposed to risk of loss in the event of nonperformance by our customers of their obligations to us. Some of our customers may be highly leveraged or subject to their own operating and regulatory risks. Many of our customers finance their activities through cash flows from operations, the incurrence of debt or the issuance of equity. From time to time, credit is less available and available on more restrictive terms. The combination of reduction of cash flow resulting from declines in commodity prices and the lack of availability of debt or equity financing may result in a significant reduction in our customers' liquidity and ability to make payments or perform on their obligations to us. Even if our credit review and analysis mechanisms work properly, we may experience financial losses in our dealings with other parties. Any increase in the nonpayment or nonperformance by our customers could reduce our cash flows.

We have been in the past from time to time, and may be in the future, subject to litigation and investigations that could have a substantial, adverse impact on our business.

From time to time we are subject to litigation, including claims related to our business activities. We have also been in the past, and may be in the future, subject to investigations by regulators and governmental agencies, including the United States Department of the Treasury's Office of Foreign Assets Control, the United States Department of Commerce, Bureau of Industry and Security and the United States Immigration and Customs Enforcement. Irrespective of their merits, litigation and investigations may be both lengthy and disruptive to our operations and could cause significant expenditure and diversion of management attention. At this time, we are not aware of any pending litigation, investigation, dispute or claim that could have a material adverse effect on our financial condition, results of operations or liquidity. However, we may be wrong in this assessment. Additionally, in the future we may become subject to additional litigation that could have a material adverse effect on our financial position and operating results, on the trading price of our securities and on our ability to access the capital markets.

Wireless devices' radio frequency emissions are the subject of regulation and litigation concerning their environmental effects, which includes alleged health and safety risks. As a result, we may be subject to new regulations, demand for our services may decrease, and we could face liability based on alleged health risks.

There has been adverse publicity concerning alleged health risks associated with radio frequency transmissions from portable hand-held telephones and other telecommunications devices that have transmitting antennas. Lawsuits have been filed against participants in the wireless communications industry alleging a number of adverse health consequences as a result of wireless phone usage. Other claims allege consumer harm from failures to disclose information about radio frequency emissions or aspects of the regulatory regimes governing those emissions. Although we have not been party to any such lawsuits, we may be exposed to such litigation in the future. Courts or governmental agencies could determine that we do not comply with applicable standards for radio frequency emissions and power or that there is valid scientific evidence that use of our devices poses a health risk. Any such finding could reduce our revenue and profitability and expose us and other communications service providers or device sellers to litigation, which, even if frivolous or unsuccessful, could be costly to defend.

Furthermore, any actual or perceived risk from radio frequency emissions could reduce the number of our subscribers and demand for our products and services.

Risks Related to Government Regulations

Our business is subject to extensive government regulation that will impact our future success.

Our MSS system is subject to significant regulation by the FCC in the United States, by the ARCEP and ANFR in France and in other foreign jurisdictions where we do business by similar authorities. Additionally, the availability of globally harmonized spectrum on which our MSS system depends is managed by the ITU. The rules and regulations of these regulatory authorities are subject to change and may not continue to permit our operations as currently conducted or as we plan to conduct them. Further, certain regulatory authorities may decide to allow additional uses within our ITU-allocation of spectrum that may be incompatible with our continued provision of MSS.

Failure to operate our satellites, ground stations, mobile earth terminals or other facilities as required by our licenses and applicable government regulations could result in the imposition of government sanctions against us, up to and including cancellation of our licenses.

Our system requires regulatory authorization in each of the jurisdictions in which we provide service. We may not be able to obtain or retain all regulatory approvals needed for operations. Regulatory changes, such as those resulting from judicial decisions or adoption of treaties, legislation or regulation in countries where we operate or intend to operate, may also significantly affect our business.

Our operations are subject to certain regulations of the United States State Department's Directorate of Defense Trade Controls (the export of satellites and related technical data), United States Treasury Department's Office of Foreign Assets Control (financial transactions and transactions with sanctioned persons or countries) and the United States Commerce Department's Bureau of Industry and Security (export of satellites and related technical data, our gateways and phones) and as well as other similar foreign regulations. These U.S. and foreign obligations and regulations may limit or delay our ability to offer products and services in a particular country. We may be required to provide U.S. and some foreign government law enforcement and security agencies with call interception services and related government assistance, in respect of which we face legal obligations and restrictions in various jurisdictions. These regulations may limit or delay our ability to operate in a particular country or engage in transactions with certain parties and may impose significant compliance costs. As new laws and regulations are issued, we may be required to modify our business plans or operations. If we fail to comply with these regulations in any country, we could be subject to sanctions that could affect, materially and adversely, our ability to operate in that country. Failure to obtain the authorizations necessary to use our assigned radio frequency spectrum and to distribute our products in certain countries could have a material adverse effect on our ability to generate revenue and on our overall competitive position.

Spectrum values historically have been volatile, and may again be volatile in the future, which could cause the value of our business to fluctuate.

Our business plan includes forming strategic partnerships to maximize the use and value of our spectrum, network assets and combined service offerings in the United States and internationally. Value that we may be able to realize from these partnerships may depend in part on the value ascribed to our spectrum. Historically, valuations of spectrum in other frequency bands have been volatile, and we cannot predict the future value that we may be able to realize for our spectrum and other assets. In addition, to the extent that the FCC makes additional spectrum available or promotes the more flexible use or greater availability (e.g., via spectrum leasing or new spectrum sales) of existing satellite or terrestrial spectrum allocations, the availability of such additional spectrum could reduce the value that we are able to realize for our spectrum.

Our business plan to use our licensed MSS spectrum to provide terrestrial wireless services depends upon action by third parties, which we cannot control.

Our business plan includes utilizing our licensed MSS spectrum to provide terrestrial wireless services, including mobile broadband applications, around the world. Our MSS licenses, including our terrestrial authority, are valid through various specified terms, which we will seek to renew. In addition, we will need to comply with certain conditions in order to provide terrestrial broadband service under our MSS licenses, including obtaining FCC certifications for our equipment that will utilize this spectrum authority. We are seeking similar approvals in various foreign jurisdictions, including applying for licenses and commencing due diligence efforts. We cannot guarantee that such efforts will be successful.

We have entered into agreements with multiple third parties to develop an ecosystem of radios and devices using our terrestrially authorized spectrum. These third parties intend to use our terrestrially authorized spectrum to offer wireless services to their respective customers. Our anticipated future revenues and profitability are dependent upon the commercial success of their offerings.

Other future regulatory decisions could reduce our existing spectrum allocation or impose additional spectrum sharing agreements on us, which could adversely affect our services and operations.

The FCC may permit other MSS operators to operate in our frequency bands in the future. To date, there are no other authorized CDMA-based MSS operators. However, the FCC or other regulatory authorities may require us to share spectrum with other systems that are not currently licensed by the United States or any other jurisdiction. From time to time, Globalstar has faced applications by other operators for access to its licensed spectrum.

We registered our second-generation constellation with the ITU through France rather than the United States. The French radio frequency spectrum regulatory agency, ANFR, submitted the technical papers filing to the ITU on our behalf in July 2009. As with the first-generation constellation, the ITU requires us to coordinate our spectrum assignments with other administrators and operators that use any portion of our spectrum frequency bands. We are actively engaged in but cannot predict how long the coordination process will take; however, we are able to use the frequencies during the coordination process in accordance with our national licenses.

The FCC and other regulatory jurisdictions internationally are permitting expanded unlicensed use of the 5 GHz band including within our C-band Forward Link (earth station to satellite), which operates at 5091-5250 Mhz which may have a significant adverse impact on our ability to provide mobile satellite services.

If the FCC, our French regulator, or any other regulator, revokes, modifies or fails to renew or amend our licenses, our ability to operate may be limited.

We hold FCC licenses for the operation of our satellites, our U.S. gateways and other ground facilities and our mobile earth terminals that are subject to revocation if we fail to satisfy specified conditions or meet prescribed milestones. The FCC licenses are also subject to renewal and modification by the FCC.

We hold licenses issued by, and subject to the continued regulatory jurisdiction of, the French Ministry in charge of Space and the ARCEP, the French independent administrative authority of post and electronic communications regulations, for the operation of our second-generation satellites. These licenses are subject to revocation if we fail to satisfy specified conditions or meet prescribed milestones. These licenses are also subject to modification by the French regulators.

There can be no assurance that the FCC or our French regulators will renew the licenses we hold. If the FCC, the French Ministry, ARCEP or any other regulators revoke, modify or fail to renew or amend the licenses we hold or if we fail to satisfy any of the conditions of our respective licenses, then we may not be able to continue to provide mobile satellite communications services, which would have a material adverse effect on our business and operations.

Furthermore, if we operate in any country without a valid license, we could face regulatory fines and criminal sanctions. We hold certain licenses in each country where our ground infrastructure is located. If we fail to maintain such licenses within any particular country, we may not be able to continue to operate the ground infrastructure located within that country, which could prevent us from continuing to provide mobile satellite communications services within that region.

Changes in international trade regulations and other risks associated with foreign trade could adversely affect our sourcing from foreign manufacturers.

We source our products from both domestic and foreign contract manufacturers, the largest concentration of which being in China. The adoption of regulations related to the importation of products, including quotas, duties, taxes and other charges or restrictions on imported goods, and changes in U.S. customs procedures could result in an increase in the cost of our products. Recently, the U.S. imposed increased tariffs on certain imports from China, including several of our products, resulting in lower gross margin on impacted products. The current tariffs could increase or expand to additional categories of products not currently covered. We cannot predict how any future tariffs or other trade restrictions will impact our business, but further trade restrictions on our products may result in further reductions to gross margin.

Additionally, delays in goods clearing customs or the disruption of international transportation lines used by us could result in our inability to deliver goods to customers in a timely manner or the loss of sales altogether. Current or future social and environmental regulations or critical issues, such as those relating to the sourcing of conflict minerals from the Democratic Republic of the Congo or the need to eliminate environmentally sensitive materials from our products, could restrict the supply of components and materials used in production and increase our costs. Any delay or interruption to our manufacturing process or in shipping our products could result in lost revenue, which would adversely affect our business, financial condition or results of operations.

Risks Related to Our Common Stock

Our common stock is traded on the NYSE American but could be delisted in the future, which may impair our ability to raise capital.

Our common stock is listed on the NYSE American under the symbol “GSAT.” Broker-dealers may be less willing or able to sell and/or make a market in our common stock if it were delisted, which may make it more difficult for shareholders to dispose of, or to obtain accurate quotations for the price of, our common stock. Removal of our common stock from listing on the NYSE American may also make it more difficult for us to raise capital through the sale of our securities.

Restrictive covenants in our 2019 Facility Agreement and Service Agreements do not allow us to pay dividends on our common stock for the foreseeable future, which may affect the market for our shares.

We do not expect to pay cash dividends on our common stock. Our 2019 Facility Agreement and Service Agreements currently prohibits the payment of cash dividends on our common stock. During 2022, we issued shares of Series A Preferred Stock. The terms of Series A Preferred Stock provides for the payment of cumulative cash dividends at a rate of 7% per annum, subject to certain terms and conditions. If such dividends are not declared by our board of directors, the dividends will accrue and cumulative payment will be made on the next dividend payment date or upon liquidation. The issuance of the Series A Preferred Stock required consent from the remaining lender of our 2019 Facility Agreement.

Any future dividend payments are within the discretion of our board of directors and will depend on, among other things, our results of operations, working capital requirements, capital expenditure requirements, financial condition, contractual restrictions, business opportunities, anticipated cash needs, provisions of applicable law and other factors that our board of directors may deem relevant. We may not generate sufficient cash from operations in the future to pay dividends on our common stock. Our inability to pay dividends may limit the market for our shares.

The market price of our common stock is volatile, and there is a limited market for our shares.

The trading price of our common stock is subject to wide fluctuations. Factors affecting the trading price of our common stock may include, but are not limited to:

- actual or anticipated variations in our operating results;
- failure in the performance of our current or future satellites;
- changes in financial estimates by research analysts, or any failure by us to meet or exceed any such estimates, or changes in the recommendations of any research analysts that elect to follow our common stock or the common stock of our competitors;
- actual or anticipated changes in economic, political or market conditions, such as recessions or international currency fluctuations;
- actual or anticipated changes in the regulatory environment affecting our industry;
- actual or anticipated changes in the value of terrestrial spectrum;
- actual or anticipated sales of common stock by our controlling stockholder or others;
- changes in the market valuations of our industry peers; and
- announcement by us or our competitors of significant acquisitions, strategic partnerships, divestitures, joint ventures or other strategic initiatives.

The trading price of our common stock may also decline in reaction to events that affect other companies in our industry even if these events do not directly affect us. Our stockholders may be unable to resell their shares of our common stock at or above the initial purchase price. Additionally, because we are a controlled company, there is a limited market for our common stock, and we cannot assure our stockholders that a trading market will further develop or persist. In periods of low trading volume, sales of significant amounts of shares of our common stock in the public market could lower the market price of our stock.

The future issuance of additional shares of our common stock could cause dilution of ownership interests and adversely affect our stock price.

We may issue our previously authorized and unissued securities, resulting in the dilution of the ownership interests of our current stockholders. We are authorized to issue 2.2 billion shares of common stock and 100 million shares of preferred stock, of which 0.3 million shares are designated as Series A Preferred Stock. As of December 31, 2022, approximately 1.8 billion shares of common stock were issued and outstanding and 0.1 million shares of Series A Preferred Stock were issued and outstanding. As of December 31, 2022, there were 0.4 billion shares of common stock available for future issuance, of which approximately 5.1 million shares were contingently issuable upon the exercise of stock options and the vesting of restricted stock awards and units and 49.1 million shares may be exercised by Partner from warrants issued under the Service Agreements to purchase up to 2.64% of our common stock (the "Warrants"). The number of Warrants issued to Partner is subject to certain adjustments, such as divided payments in shares of Globalstar common stock, stock splits, stock repurchases, merger, sale of assets or upon certain issuances of Globalstar common stock. We may issue additional shares of our common stock or other securities that are convertible into, or exercisable for, common stock for raising capital or other business purposes. Future sales of substantial amounts of common stock, or the perception that such sales could occur, may have a material adverse effect on the price of our common stock.

We have issued and may issue shares of preferred stock or debt securities with greater rights than our common stock.

Our certificate of incorporation authorizes our board of directors to issue one or more series of preferred stock and set the terms of the preferred stock without seeking any further approval from holders of our common stock. Currently, there are 100 million shares of preferred stock authorized, of which 0.1 million shares of Series A Preferred Stock are issued and outstanding. Any preferred stock that is issued may rank ahead of our common stock in terms of dividends, priorities and liquidation premiums and have preferential voting rights to those held by the holders of our common stock.

If persons engage in short sales of our common stock, the price of our common stock may decline.

Selling short is a technique used by a stockholder to take advantage of an anticipated decline in the price of a security. A significant number of short sales or a large volume of other sales within a relatively short period of time can create downward pressure on the market price of a security. Further sales of common stock could cause even greater declines in the price of our common stock due to the number of additional shares available in the market, which could encourage short sales that could further undermine the value of our common stock. Holders of our securities could, therefore, experience a decline in the value of their investment as a result of short sales of our common stock.

Provisions in our charter documents, debt agreements and Delaware corporate law may discourage takeovers, which could affect the rights of holders of our common stock.

Provisions of Delaware law and our amended and restated certificate of incorporation, amended and restated bylaws and our debt agreements could hamper a third party's acquisition of us or discourage a third party from attempting to acquire control of us. These provisions include:

- the election of our Minority Directors by a plurality of the vote of our stockholders other than Thermo;
- the requirement that (i) any extraordinary corporate transaction, such as a merger, reorganization or liquidation, involving us or any of our subsidiaries and (ii) any sale or transfer of a material amount of assets of Globalstar or any sale or transfer of assets of any of our subsidiaries which are material to us has to be approved by the Strategic Review Committee until such time as Thermo no longer beneficially owns at least 45% of our common stock;
- the ability of our board of directors to issue preferred stock with voting rights or with rights senior to those of the common stock without any further vote or action by the holders of our common stock;
- the division of our board of directors into three separate classes serving staggered three-year terms;
- the fact that if Thermo does not own a majority of our outstanding capital stock entitled to vote in the election of directors, our directors will be able to be removed for cause only with the affirmative vote of the holders of at least 66 2/3% of the outstanding shares of capital stock entitled to vote in the election of directors;
- prohibitions, at such time when Thermo does not own a majority of our outstanding capital stock entitled to vote in the election of directors, on our stockholders acting by written consent;
- prohibitions on our stockholders calling special meetings of stockholders or filling vacancies on our board of directors;
- the requirement, at such time when Thermo does not own a majority of our outstanding capital stock entitled to vote in the election of directors, that our stockholders must obtain a super-majority vote to amend or repeal our amended and restated certificate of incorporation or bylaws;
- change of control provisions in our 2019 Facility Agreement, which provide that a change of control will constitute an event of default and, unless waived by the lenders, will result in the acceleration of the maturity of all indebtedness under that agreement; and
- change of control provisions in our 2006 Equity Incentive Plan, which provide that a change of control may accelerate the vesting of all outstanding stock options, stock appreciation rights and restricted stock.

We also are subject to Section 203 of the Delaware General Corporation Law, which, subject to certain exceptions, prohibits us from engaging in any business combination with any interested stockholder, as defined in that section, for a period of three years following the date on which that stockholder became an interested stockholder. This provision does not apply to Thermo, which became our principal stockholder prior to our initial public offering.

These provisions also could make it more difficult for our stockholders to take certain corporate actions, and could limit the price that investors might be willing to pay in the future for shares of our common stock.

We are controlled by Thermo, whose interests may conflict with yours.

As of December 31, 2022, Thermo owned approximately 60% of our outstanding common stock. We have depended substantially on Thermo to provide capital to finance our business. Although extraordinary corporate transactions, material sales of assets and certain transactions with related parties must be approved by the Strategic Review Committee, to the extent these and other matters are also subject to a vote of our shareholders, Thermo is able to control such vote. These matters include the election of certain members of our board of directors and numerous other matters, including changes of control and other significant corporate transactions, so long as these transactions are not between Thermo and Globalstar and until such time as Thermo shall no longer be the beneficial owner of 45% or more of our outstanding common stock.

Thermo is controlled by James Monroe III, our Executive Chairman. Through Thermo, Mr. Monroe holds equity interests in, and serves as an executive officer or director of, a diverse group of privately-owned businesses not otherwise related to us. We reimburse Thermo and Mr. Monroe for certain third party, documented, out-of-pocket expenses they incur in connection with our business.

The interests of Thermo may conflict with the interests of our other stockholders. Thermo may take actions it believes will benefit its equity investment in us or loans to us even though such actions might not be in your best interests as a holder of our common stock.

Item 1B. Unresolved Staff Comments

Not Applicable

Item 2. Properties

As of December 31, 2022, our principal headquarters are located in Covington, Louisiana. We own or lease the facilities described in the following table:

Facility Use	Location
Offices	Africa (Botswana)
	Brazil (Rio de Janeiro)
	Central America (Panama)
	Europe (Ireland)
	United States of America (California and Louisiana) (1)
Gateways	Africa (Botswana, Gabon and Rwanda)
	Argentina (Bosque Alegre)
	Asia (Japan, Singapore and South Korea)
	Australia (Dubbo, Meekatharra and Mount Isa)
	Brazil (Manaus, Petrolina and Presidente Prudente)
	Canada (Alberta and Ontario)
	Europe (Estonia, France, Greece and Spain) (2)
	Mexico (Jocotitlan)
	Oceania (New Zealand)
	South America (Venezuela)
	United States of America (Alaska, Florida, Hawaii, Puerto Rico and Texas) (3)

(1) Location includes a Satellite and Ground Control Center.
(2) Location includes a Satellite Control Center.
(3) Certain owned properties are encumbered by liens in favor of the administrative agent under our 2019 Facility Agreement (and expected to be encumbered by liens under the Service Agreements) for the benefit of the lenders thereunder. See Part II, Item 7. *Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources - Contractual Obligations and Commitments* in this Report.

As of December 31, 2022, we have executed an additional agreement for a new gateway location that is expected to commence during 2023.

Item 3. Legal Proceedings

For a description of any material legal and regulatory proceedings and settlements, see Note 9: Commitments and Contingencies in our Consolidated Financial Statements in Part II, Item 8 of this Report.

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

Common Stock Information

Our common stock trades on the NYSE American under the symbol "GSAT". As of February 24, 2023, 1,811 million shares of our common stock were outstanding, held by 226 holders of record. The number of holders of record is based upon the actual number of holders registered at such date and does not include holders of shares in street name or persons, partnerships, associates, corporations or other entities in security position listings maintained by depositories.

Preferred Stock

On November 15, 2022, we issued 149,425 shares, of our 7.0% Perpetual Preferred Stock, Series A, $0.0001 par value per share, with a liquidation preference of $1,000 per share (the “Series A Preferred Stock”). Holders of Series A Preferred Stock will be entitled to receive, when, as and if declared by our Board of Directors or a committee thereof, cumulative cash dividends based on the liquidation preference of the Series A Preferred Stock, at a fixed rate equal to 7.00% per annum, payable quarterly in arrears on January 1, April 1, July 1 and October 1 of each year, beginning on January 1, 2023. As of February 24, 2023, 149,425 shares of our preferred stock were outstanding, held by four holders of record.

In January 2023, our Board of Directors declared a dividend totaling $1.3 million for the period between November 15, 2022 and December 31, 2022; this payment was made in January 2023.

Dividend Information

We have never declared or paid any cash dividends on our common stock. Prior to January 2023, we have never declared or paid any cash dividends on our preferred stock As discussed above, in November 2022, we issued shares of Series A Preferred Stock, which provides for the payment of cumulative cash dividends at a rate of 7% per annum. The issuance of the Series A Preferred Stock required consent from the remaining lender under our 2019 Facility Agreement. Except for preferred stock dividends, we currently intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future. See Note 6: Long-Term Debt and Other Financing Arrangements in our Consolidated Financial Statements for further discussion.

Item 6. [Reserved]

Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis should be read in conjunction with our Consolidated Financial Statements and applicable notes to our Consolidated Financial Statements and other information included elsewhere in this Report, including risk factors disclosed in Part I, Item IA. Risk Factors. The following information contains forward-looking statements, which are subject to risks and uncertainties. Should one or more of these risks or uncertainties materialize, our actual results may differ from those expressed or implied by the forward-looking statements. See “*Forward-Looking Statements*” at the beginning of this Report.

Performance Indicators

Our management reviews and analyzes several key performance indicators in order to manage our business and assess the quality and potential variability of our earnings and cash flows. These key performance indicators include:

- total revenue, which is an indicator of our overall business growth;
- subscriber growth and churn rate, which are both indicators of the satisfaction of our customers;
- average monthly revenue per user, or ARPU, which is an indicator of our pricing and ability to obtain effectively long-term, high-value customers. We calculate ARPU separately for each type of our subscriber-driven revenue, including Duplex, Commercial IoT and SPOT;
- operating income and adjusted EBITDA, both of which are indicators of our financial performance; and
- capital expenditures, which are an indicator of future revenue growth potential and cash requirements.

Comparison of the Results of Operations for the years ended December 31, 2022 and 2021

Revenue:

Our revenue is categorized as service revenue and equipment revenue. We provide services to customers using technology from our satellite and ground network. Equipment revenue is generated from the sale of devices that work over our network. During the twelve months ended December 31, 2022, total revenue increased $24.2 million, or 19%, to $148.5 million from $124.3 million in 2021. See below for a further discussion of the fluctuation in revenue.

The following table sets forth amounts and percentages of our revenue by type of service (dollars in thousands).

	Year Ended December 31, 2022		Year Ended December 31, 2021	
	Revenue	% of Total Revenue	Revenue	% of Total Revenue
Service Revenue:				
Subscriber services				
Duplex	$ 29,222	20 %	$ 31,197	25 %
SPOT	45,670	31 %	46,040	37 %
Commercial IoT	19,516	13 %	17,951	14 %
Wholesale capacity services	34,913	24 %	8,945	7 %
Engineering and other services	2,747	1 %	2,331	2 %
Total Service Revenue	$ 132,068	89 %	$ 106,464	85 %

The following table sets forth amounts and percentages of our revenue generated from equipment sales (dollars in thousands).

	Year Ended December 31, 2022		Year Ended December 31, 2021	
	Revenue	% of Total Revenue	Revenue	% of Total Revenue
Equipment Revenue:				
Duplex	$ 319	— %	$ 1,011	1 %
SPOT	5,888	4 %	9,427	8 %
Commercial IoT	10,132	7 %	7,169	6 %
Other	97	— %	226	— %
Total Equipment Revenue	$ 16,436	11 %	$ 17,833	15 %

The following table sets forth our average number of subscribers and ARPU by type of revenue.

	December 31,	
	2022	2021
Average number of subscribers for the year ended:		
Duplex	40,913	45,789
SPOT	272,088	268,735
Commercial IoT	442,060	414,689
Other	13,330	26,864
Total	768,391	756,077
ARPU (monthly):		
Duplex	$ 59.52	$ 56.78
SPOT	13.99	14.28
Commercial IoT	3.68	3.61

The numbers reported in the above table are subject to immaterial rounding inherent in calculating averages.

We count "subscribers" based on the number of devices that are subject to agreements that entitle them to use our voice or data communications services rather than the number of persons or entities who own or lease those devices.

Wholesale capacity service revenue includes revenue generated from satellite network access and related services under the Service Agreements, and engineering and other service revenue includes revenue generated primarily from certain governmental and engineering service contracts; neither of these service revenue items is subscriber driven. Accordingly, we do not present ARPU for wholesale capacity service revenue or engineering and other service revenue in the table above.

As previously discussed, during the first quarter of 2022, approximately 25,000 subscribers previously recorded in Other in the table above were removed from our subscriber count.

Service Revenue

Duplex service revenue decreased 6% in 2022 due primarily to a decline in average subscribers of 11% offset by an increase in ARPU of 5%. The decrease in average subscribers is due to churn exceeding gross activations over the last twelve months. In line with the shift in demand across the MSS industry from full Duplex voice and data services to IoT-enabled devices, we expect the decline in our Duplex subscriber base to continue as we focus our investments on IoT-enabled devices and services. The increase in ARPU is due to adjustments made to certain rate plans to align pricing with our competitors and to better align the value of services offered to our Duplex subscribers. Higher service prices were offset partially by strengthening of the U.S. dollar which lowered the revenue recognized from billings denominated in certain foreign currencies.

SPOT service revenue decreased 1% in 2022 due to lower ARPU, offset partially by an increase in average subscribers. The decrease in ARPU is due to the strengthening of the U.S. dollar as well as the mix of subscriber rate plans, including the continued popularity of our flex plans. Our flex plans generally carry lower rates than our traditional prepaid unlimited plans because users can suspend their service plan periodically during their contract term. Slightly offsetting the decrease in revenue due to lower ARPU were higher average subscribers. During 2022, our average subscriber base increased despite fewer than forecasted activations resulting from supply chain disruptions over the past few quarters (see further discussion below).

Commercial IoT service revenue increased 9% in 2022 due to higher average subscribers and, to a lesser extent, higher ARPU. During 2022, average subscribers increased 7% and ARPU increased 2%. Gross subscriber activations have increased 26% over the last twelve months and subscriber churn is lower over the same period. Our average subscriber base has grown despite significant production delays in 2022 resulting from component part shortages (discussed further below). As we fulfill sales back orders for Commercial IoT products, we expect to see activations continue to increase. Importantly, during the fourth quarter of 2022, we were able to fulfill many of these back orders, resulting in a greater than 50% increase in gross subscriber activations quarter over quarter. During 2022, steady growth in our Latin American subscriber base has also contributed to higher revenue; average subscribers for this region increased 29% and represent 4% of our average subscriber growth in total. The fluctuations in ARPU for both periods are driven by the mix of subscribers on various rate plans.

Wholesale capacity service revenue increased $26.0 million to $34.9 million during 2022 from $8.9 million during 2021 due to the timing and amount of revenue recognized associated with the Service Agreements. This increase in revenue was due primarily to consideration received for performance obligations associated with our work to expand and upgrade our gateways around the globe in preparation for the launch of service as well as fees associated with the services that commenced in November 2022.

Engineering and other service revenue increased $0.4 million in 2022. Throughout 2022, we have made significant progress on constructing a teleport for a customer at one of our gateway locations in Brazil; the services performed for this customer contributed to more than the total increase in Engineering and other service revenue during the year. Other smaller items offset this increase in revenue year over year. Additionally, as previously discussed, we disconnected service to approximately 25,000 subscribers in Russia. During 2021, we billed less than $0.3 million to these subscribers and the revenue associated with these subscribers was recorded in Engineering and other service revenue.

Subscriber Equipment Sales

Revenue from Duplex equipment sales decreased $0.7 million, or 68%, in 2022. This decrease was due to a lower sales volume of phones and accessories since these devices are no longer being manufactured.

Revenue from SPOT equipment sales decreased $3.5 million, or 38%, in 2022. This decrease resulted from a lower volume of products sold over the last twelve months. Two of our core SPOT products were on back order for the vast majority of 2022, which delayed the fulfillment of orders, thereby reducing equipment sales year over year. We continue to see demand exceeding supply resulting from supply chain disruptions caused by component part shortages. We are actively working to address this issue. Production has resumed, and we are optimistic the remaining back orders will be fulfilled by the end of the first quarter of 2023.

Revenue from Commercial IoT equipment sales increased $3.0 million, or 41%, in 2022 due primarily to growth in demand for our Commercial IoT products and services. This demand has outpaced available inventory due to supply chain disruptions caused by component part shortages. While production issues were substantially resolved during the second half of 2022, we continue to be in a back order position. Once we are able to produce sufficient quantities to meet demand, we expect equipment sales to continue to increase and expect the remaining back orders will be fulfilled by the end of the first quarter of 2023.

Operating Expenses:

Total operating expenses increased 95% to $369.5 million in 2022 from $189.8 million in 2021 due primarily to reductions in the value of inventory and long-lived assets. This item and other contributors to the variance in operating expenses are explained in detail below.

Cost of Services

Cost of services increased $6.0 million, or 16%, to $43.4 million in 2022 from $37.4 million in 2021. The increase in cost of services was due to higher personnel costs totaling $3.0 million, which included $0.7 million related to non-recurring bonuses and separation pay. Higher lease expense associated with new teleport leases (including associated occupancy costs, such as utilities and other building services), which commenced throughout the second half of 2021, contributed to $2.2 million of the total increase. These leases were executed in connection with the gateway expansion project to support the Service Agreements; 85% of these lease and related costs are being reimbursed to us, and this consideration is being recognized as revenue (as further discussed above in "Wholesale capacity service revenue"). Higher professional fees and licensing costs related to our implementation of a new enterprise resource planning ("ERP") system, which went live in January 2022, as well as other costs for information technology security and maintenance contributed $1.8 million to the total increase.

These increases were offset partially by an employee retention credit received in December 2022. We received this refund check totaling $1.8 million as a result of our eligibility for the employee retention credit under the provisions of the Coronavirus Aid, Relief and Economic Security Act (the "CARES Act") for the first quarter of 2021. The refund was recorded as a reduction to operating expenses during the fourth quarter of 2022 and was allocated between Cost of Services and MG&A (defined below) totaling $1.3 million and $0.5 million, respectively, based on the employee costs incurred during the eligible period.

Cost of Subscriber Equipment Sales

Cost of subscriber equipment sales decreased by $0.5 million, or 4%, to $13.1 million in 2022 from $13.6 million in 2021. This decrease is generally consistent with the decrease in total revenue from subscriber equipment sales, offset partially by the impact of the 2021 reversal of a prior year accrual for tariffs. Pursuant to regulatory developments, we reversed this accrual for potential tariffs owed on imports from China made prior to a ruling by the U.S Customs and Border Protection in September 2019 that we no longer believe will be due, resulting in an expense reduction of $1.0 million in 2021. Margin percentages for both SPOT and Commercial IoT narrowed during 2022 compared to 2021 resulting from the mix of products sold during each respective period.

Cost of Subscriber Equipment Sales - Reduction in the Value of Inventory

During 2022, we recorded a reduction in the value of inventory totaling $8.6 million. As disclosed in Note 8: Fair Value Measurements to our Consolidated Financial Statements, upon Partner's announcement in September 2022, our strategy relative to second-generation Duplex assets shifted. Due to this shift in strategy, we concluded that there was no remaining net realizable value of our second-generation Duplex inventory, resulting in an $8.5 million reduction in value of inventory. During 2021, we recorded a reduction in the value of inventory totaling $1.0 million which included the write-off of certain materials that were not likely to be used in production as well as defective inventory units that were not saleable.

Marketing, General and Administrative

Marketing, general and administrative expenses ("MG&A") increased $2.7 million, or 7%, to $44.1 million in 2022 from $41.4 million in 2021. The increase was due to higher personnel costs of $5.0 million. Included in personnel costs are higher stock-based compensation driven by performance grants to certain employees associated with their efforts under the Service Agreements ($4.0 million of the increase), cash bonuses ($0.5 million of the increase) and separation pay ($0.5 million of the increase). Higher professional and legal fees totaling $0.8 million also increased MG&A expense during the year. The provision for credit losses increased $0.9 million during 2022; this increase was due in part to a successful recovery of a previously reserved customer balance during 2021, which reduced expense in 2021 and did not recur in 2022.

These increases were offset partially by certain non-recurring items, including lower subscriber acquisition costs of $1.0 million due primarily to the deactivation of all Sat-Fi2® subscribers during the first half of 2021. Additionally, during 2021, we terminated our dealer program and reduced advertising spend for Duplex products and services; these items contributed $1.2 million to the decrease in MG&A expense. Also, during the first quarter of 2022, we reversed a $1.0 million accrual related to professional services associated with the 2018 shareholder litigation based on our assessment of the likelihood of payment. As discussed above in *Cost of Services*, we received a refund check as a result of our eligibility for the employee retention credit under the provisions of the CARES Act; we recorded a reduction to MG&A totaling $0.5 million during 2022.

Reduction in Value of Long-Lived Assets

During 2022, we recorded a reduction in the value of long-lived assets totaling $166.5 million. As disclosed in Note 8: Fair Value Measurements to our Consolidated Financial Statements, upon Partner's announcement in September 2022, our strategy relative to our second-generation Duplex assets shifted. Due to this shift in strategy, we re-assessed our asset grouping for long-lived assets and determined that the second-generation Duplex assets (including the gateways (and related technology) capable of providing commercial traffic to support Sat-Fi2®) are no longer part of our overall satellite and ground network. These second-generation Duplex assets will no longer provide future cash flows to us - these assets totaled approximately $161.2 million prior to their write down in September 2022. Our first-generation Duplex assets (i.e. handsets and related ground infrastructure) were not impacted. Also reflected in the reduction in the value of long-lived assets were certain prepaid licenses and royalties necessary for the manufacture and distribution of second-generation Duplex products and services. These prepaid items are no longer considered recoverable as there are no longer separately identifiable cash flows for such assets - these assets totaled approximately $4.7 million prior to their write down in September 2022.

Additionally, during 2022, we recorded reductions in the value of intangible and other assets totaling $0.6 million. We wrote off work in progress associated with spectrum licensing efforts in certain countries around the world. We determined that attainment of such licenses was no longer probable based on discussions with regulators and other circumstances.

Other (Expense) Income:

Gain on Extinguishment of Debt

We recorded a gain on extinguishment of debt totaling $2.8 million during 2022 related to the November 2022 exchange of a portion of the 2019 Facility Agreement principal balance into Series A Preferred Stock. This gain was recorded for the portion exchanged for unaffiliated lenders only. The gain represents the difference between the net carrying amount prior to extinguishment (including unamortized deferred financing costs, debt discounts, and related derivative) and the reacquisition price of the debt.

We recorded a net gain on extinguishment of debt totaling $3.1 million during 2021 related to the following items: (i) gain on extinguishment of debt of $5.0 million resulting from the Small Business Administration's forgiveness of amounts outstanding under our Paycheck Protection Program ("PPP") loan and (ii) net losses on extinguishment of debt of $1.9 million resulting from the write off of deferred financing costs following unscheduled principal repayments of the 2009 Facility Agreement during 2021.

Interest Income and Expense

Interest income and expense, net, decreased $13.3 million to $30.2 million for 2022 compared to $43.5 million for 2021. This decrease was driven primarily by higher capitalized interest (which decreases interest expense) of $11.5 million and lower gross interest costs of $1.8 million. The increase in capitalized interest is due to an increase in our construction in progress balance during 2022, associated primarily with the satellite procurement agreement with MDA to construct new satellites to replenish our existing satellite constellation. Gross interest costs were lower due to lower interest of $7.6 million associated with the 2009 Facility Agreement; this decrease was offset partially by higher interest of $2.3 million associated with the 2019 Facility Agreement, imputed non-cash interest associated with the significant financing component related to advance payments from Partner under the Service Agreements of $1.9 million, and the accrual of interest associated with our vendor financing totaling $1.3 million. Other smaller items contributed to the remaining variance during 2022.

Derivative Loss

We recorded derivative losses of $0.8 million and $1.0 million in 2022 and 2021, respectively. We recognize gains or losses due to the change in the value of certain embedded features within our debt instruments that require standalone derivative accounting. During 2022, an increase in the discount rate used in the valuation of the derivative associated with the 2019 Facility Agreement contributed to the derivatives loss. This impact was offset partially by changes in the probability and timing of prepayments contemplated in the valuation of the derivative associated with our 2019 Facility Agreement. Additionally, we recorded a gain on the valuation adjustment of the embedded derivative associated with our 2013 8.00% Notes following their conversion during the first quarter of 2022. The losses recorded during 2021 were due primarily to an increase in our stock price and stock price volatility, which are significant inputs used in the valuation of the embedded derivative associated with our 2013 8.00% Notes. See Note 8: Fair Value Measurements to our Consolidated Financial Statements for further discussion of the computation of the fair value of our derivatives.

Foreign Currency Loss

Foreign currency loss fluctuated by $0.3 million to a loss of $6.6 million in 2022 from a loss of $6.3 million in 2021. Changes in foreign currency gains and losses are driven by the remeasurement of financial statement items, which are denominated in various currencies, at each reporting period. For 2022 and 2021, the foreign currency losses were due to the strengthening of the U.S. dollar relative to certain other currencies, such as the Euro; other currency fluctuations of the Canadian Dollar and the Brazilian Real also impacted the net losses in both periods.

Pension Settlement Loss

In August 2022, we settled the remaining pension liability; this settlement resulted in a loss of $1.5 million. See Note 12: Pensions and Other Employee Benefits to our Consolidated Financial Statements for further discussion. Similar activity did not occur during 2021.

Income Tax Expense (Benefit)

Income tax expense (benefit) fluctuated by $0.4 million to an expense of $0.1 million in 2022 from a benefit of $0.3 million in 2021. The primary income tax expense (benefit) is related to deferred state tax liabilities associated with net operating loss limitations.

Comparison of the Results of Operations for the years ended December 31, 2021 and 2020

Discussion of the results of operations for the years ended December 31, 2021 and 2020 can be found in the Globalstar Annual Report on Form 10-K for the year ended December 31, 2021, as filed with the SEC on February 25, 2022.

Liquidity and Capital Resources

Our principal near-term liquidity requirements include funding our operating costs; capital expenditures, including repayment of amounts being financed through MDA, and future amounts expected to be incurred under the satellite procurement agreement; repayment of the remaining principal balance due under the 2019 Facility Agreement; and interest and dividends due on any debt or preferred equity instruments outstanding.

Our principal sources of liquidity during 2022 included cash on hand, cash flows from operations and vendor financing. Our principal sources of liquidity over the next twelve months are expected to included cash on hand, cash flows from operations, prepayments under the Service Agreements (discussed in *Recent Developments* below) and funds from a debt or equity financing that have not yet been arranged. With this financing, we expect that our sources of liquidity will be sufficient for us to cover our obligations over the next twelve months and longer term. Another source of liquidity may include proceeds from the exercise of warrants under the Service Agreements.

Overview

As of December 31, 2022 and December 31, 2021, we held cash and cash equivalents of $32.1 million and $14.3 million, respectively.

The total carrying amount of our debt and vendor financing outstanding was $191.9 million at December 31, 2022, compared to $237.9 at December 31, 2021.

The $46.0 million decrease in the carrying amount of our debt and vendor financing was due to the November 2022 exchange of $149.4 million principal amount of our 2019 Facility Agreement, a $6.3 million mandatory prepayment of principal in August 2022 of our 2019 Facility Agreement, and a $1.4 million reduction in the principal balance of the 2013 8.00% Notes following their conversion into shares of Globalstar common stock during 2022. These items were offset by amounts due to MDA under the satellite procurement agreement of $59.8 million during 2022, a higher carrying value of the 2019 Facility Agreement of $51.4 million due to the accrual of PIK interest ($35.2 million), the accretion of debt discount and amortization of deferred financing costs ($5.3 million) and the write off of deferred financing costs associated with the exchange discussed below ($10.9 million).

Recent Developments

On February 27, 2023, Globalstar and Partner agreed to amend the Service Agreements to provide for, among other things, Partner’s prepayment of $252 million to us (the “Prepayment”). We plan to use the proceeds of the Prepayment to pay amounts currently due and payable, and future amounts due, under our previously disclosed Satellite Procurement Agreement with MDA, as well as launch, insurance and ancillary costs incurred in connection with the construction and launch of these satellites. The Prepayment replaces our requirement to raise third-party financing for these costs as previously required under the Service Agreements and will be funded on a quarterly basis, subject to certain conditions in the agreement. The remaining amount of the satellite costs is expected to be funded from our operating cash flows.

The amount of the Prepayment and fees payable thereon will be recouped from amounts payable by our Partner for services provided by us under the Service Agreements. The Prepayment is expected to be recouped in installments for a period of 16 quarters beginning no later than the third quarter of 2025. The Prepayment may also be repaid over time through excess cash flow sweeps or voluntary prepayments, as provided under the terms of the prepayment agreement. For as long as any portion of the Prepayment is outstanding, we will be subject to certain covenants including (i) minimum cash balance of $30 million, (ii) interest coverage and leverage ratios, and (iii) limitations on certain asset transfers, expenditures and investments.

Amounts payable by us in connection with the Prepayment will be guaranteed by Thermo, subject to applicable shareholder approval. Prior to such shareholder approval, Thermo has agreed to provide support of certain of our obligations under the Service Agreements, the Satellite Procurement Agreement, and certain related contracts directly to Partner.

As conditions precedent to Prepayment funding, we must (i) convert or refinance the remaining loans outstanding under the 2019 Facility Agreement by March 13, 2023 and (ii) grant Partner a first-priority lien in our assets to secure its obligations under the Service Agreements.

Cash Flows for the years ended December 31, 2022, 2021 and 2020

The following table shows our cash flows from operating, investing and financing activities (in thousands):

	Year Ended December 31,		
Statements of Cash Flows	2022	2021	2020
Net cash provided by operating activities	$ 63,800	$ 131,881	$ 22,215
Net cash used in investing activities	(39,952)	(45,186)	(14,536)
Net cash (used in) provided by financing activities	(6,048)	(140,282)	1,164
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(22)	(132)	52
Net increase (decrease) in cash, cash equivalents and restricted cash	$ 17,778	$ (53,719)	$ 8,895

Cash Flows Provided by Operating Activities

Net cash provided by operations includes primarily cash receipts from wholesale capacity services provided to our Partner under the Service Agreements as well as satellite voice and data services provided, and equipment sold, to our subscribers. We use cash in operating activities primarily for personnel, network maintenance, inventory purchases and other general corporate expenditures.

Net cash provided by operating activities was $63.8 million during 2022 compared to $131.9 million during 2021. This decrease was due primarily to a smaller increase in deferred revenue during 2022 compared to 2021 due to the timing and amount of prepayments made by Partner under the Service Agreements, which were recorded as deferred revenue (see Note 2: Revenue to our Consolidated Financial Statements for further discussion). The decrease in operating cash flows was also due to other working capital changes year over year, including the timing of vendor payments and customer receivables, offset partially by higher net income in 2022 after adjusting for noncash items.

Cash Flows Used in Investing Activities

Net cash used in investing activities was $40.0 million during 2022 compared to $45.2 million during 2021. The nature of our capital expenditures in both years related primarily to network upgrades associated with the Service Agreements, including the procurement and deployment of new antennas for our gateways, the preparation and launch of our on-ground spare satellite in June 2022, and milestone work under the satellite procurement agreement with MDA which was executed in February 2022. Cash used in investing decreased from 2021 to 2022 due to lower costs associated with gateway upgrades as that portion of the project nears completion, offset partially by replacement satellite costs.

Cash Flows Provided by (Used in) Financing Activities

Net cash used in financing activities was $6.0 million in 2022 compared to net cash provided by financing activities of $140.3 million in 2021. Net cash used in financing activities was $6.0 million during 2022 due to an unscheduled principal repayment of the 2019 Facility Agreement in August 2022 totaling $6.3 million. During 2021, we paid off the remaining principal balance due under the 2009 Facility Agreement of $187.0 million (see further discussion below). In March 2021, we received $43.7 million in proceeds from the exercise of the warrants issued with our 2019 Facility Agreement and, in December 2021, we received a partial refund of premiums previously paid for the 2009 Facility Agreement of $2.6 million.

Discussion of our cash flows from operating, investing and financing activities for the years ended December 31, 2021 and 2020 can be found in the Globalstar Annual Report on Form 10-K for the year ended December 31, 2021, as filed with the SEC on February 25, 2022.

Indebtedness

For further discussion on all of our debt and other financing arrangements, see Note 6: Long-Term Debt and Other Financing Arrangements in our Consolidated Financial Statements.

2019 Facility Agreement

In November 2019, we entered into a $199.0 million facility agreement with Thermo, an affiliate of EchoStar Corporation and certain other unaffiliated lenders. The 2019 Facility Agreement is scheduled to mature in November 2025. The remaining loans under the 2019 Facility Agreement bear interest at a rate of 14% per annum to be paid-in-kind (or in cash, at our option). As of December 31, 2022, the principal amount outstanding under the 2019 Facility Agreement was $143.2 million. As previously disclosed, we provided notice to the agent and remaining lender of our intent to voluntarily prepay all remaining amounts due under the 2019 Facility Agreement by March 13, 2023.

In connection with our Partner's launch of Services on November 15, 2022, to satisfy our obligation to complete the Thermo Debt Conversion (as described in our Current Report on Form 8-K filed September 7, 2022), we entered into an Exchange Agreement dated as of November 15, 2022 (the “Exchange Agreement”) with affiliates of Thermo and certain other lenders (collectively, the “Exchanging Lenders”) providing for the exchange of all the outstanding principal amount of, and accrued and unpaid interest on, the Exchanging Lenders’ loans under the 2019 Facility Agreement for shares of our Series A Preferred Stock. Pursuant to the terms of the Exchange Agreement, on November 15, 2022, we exchanged a total of $149.4 million of loans under the 2019 Facility Agreement, including all loans held by Thermo.

Our obligations under the 2019 Facility Agreement are guaranteed on a senior secured basis by all of our domestic subsidiaries' assets and are secured by a first priority lien on substantially all of our assets and our domestic subsidiaries (other than their FCC licenses), including patents and trademarks, 100% of the equity of our domestic subsidiaries and 65% of the equity of certain foreign subsidiaries.

The 2019 Facility Agreement contains customary events of default and requires us to satisfy various financial and non-financial covenants. The compliance calculations of the financial covenants of the 2019 Facility Agreement permit us to include certain cash funds we receive from the issuance of our common stock and/or subordinated indebtedness. We refer to these funds as "Equity Cure Contributions". If we violate any covenants and are unable to obtain a sufficient Equity Cure Contribution or obtain a waiver, we would be in default under the 2019 Facility Agreement, and the lenders could accelerate payment of the indebtedness. As of December 31, 2022, we were in compliance with all the covenants of the 2019 Facility Agreement.

The 2019 Facility Agreement requires mandatory prepayments of principal with any Excess Cash Flow (as defined and calculated in the 2019 Facility Agreement) on a semi-annual basis. We generated Excess Cash Flow for the six-month measurement period ended June 30, 2022 and were required to pay $6.3 million to our lenders in August 2022. This payment reduced future principal payment obligations. The Company generated Excess Cash Flow for the six-month measurement period ended December 31, 2022 and will be required to pay approximately $2.0 million if the debt remains outstanding on March 16, 2023.

Vendor Financing

In February 2022, we entered into a satellite procurement agreement with MDA. This agreement (as amended in October 2022 and January 2023) provides for deferrals of milestone payments through March 15, 2023. We have made $34 million in payments to MDA under this agreement, including $14 million during the fourth quarter 2022 and $20 million in January 2023. As of December 31, 2022, the amount outstanding under this agreement was $59.8 million. Interest accrues on the amount outstanding at an annual rate of 7%, which increased to 10.5% on balances outstanding between December 2022 and March 2023. As discussed above, we expect to pay the deferred milestone payments on or before March 15, 2023 using Prepayment funding from our Partner under the Service Agreements.

8.00% Convertible Senior Notes Issued in 2013

In May 2013, we issued $54.6 million aggregate principal amount of its 2013 8.00% Notes. In March 2022, the holders converted the remaining principal amount outstanding into 2.3 million shares of Globalstar common stock at a conversion price of $0.69 (as adjusted) per share of common stock.

Series A Preferred Stock

In November 2022, we entered into an exchange agreement with the Exchange Lenders, who are affiliates of Thermo and certain other lenders providing for the exchange of all the outstanding principal amount of, and accrued and unpaid interest on, the Exchanging Lenders’ loans under the 2019 Facility Agreement for shares of Series A Preferred Stock. Holders of Series A Preferred Stock will be entitled to receive, when, as and if declared by our Board of Directors or a committee thereof, cumulative cash dividends based on the liquidation preference of the Series A Preferred Stock, at a fixed rate equal to 7.00% per annum, payable quarterly in arrears on January 1, April 1, July 1 and October 1 of each year, beginning on January 1, 2023.

Contractual Obligations and Commitments

Contractual obligations arising in the normal course of business consist primarily of debt obligations (as discussed above), purchase commitments with vendors related to the procurement, deployment and maintenance of our network (discussed below), obligations for non-cancellable purchase orders for inventory ($14.0 million which we expect to be fulfilled in the next fifteen months based on current forecasted equipment sales) and operating lease obligations (see Note 3: Leases to our Consolidated Financial Statements for further discussion).

Satellite Procurement Agreement

We have a satellite procurement agreement with MDA pursuant to which we expect to acquire 17 new satellites that will replenish our existing constellation of satellites and ensure long-term continuity of our mobile satellite services. The procurement agreement requires MDA to deliver the satellites by 2025, with an expectation that all satellites will be launched by the end of 2025. We are acquiring the satellites to provide continuous satellite services to Partner under the Service Agreements, as well as services to our current and future customers. The current contract price for the new satellites is $327.0 million and we have the option of purchasing additional satellites under the contract. In addition, MDA will procure a satellite operations control center for $4.9 million.

To date, the parties have accepted milestones totaling $121.0 million, of which $34.0 million has been paid in cash ($14.0 million was paid during 2022 and an additional $20.0 million was paid in January 2023) and $39.6 million remains as vendor financing due on March 15, 2023. The most recent milestone of $47.4 million was completed in January 2023, as provided in the procurement agreement, and payment is due within the 45-day payment terms pursuant to the procurement agreement. As discussed above, we expect to pay the outstanding milestone payments using Prepayment funding from our Partner under the Service Agreements.

The satellite procurement agreement with MDA contains customary termination provisions including our right to terminate the contract for convenience at any time, subject to certain conditions. We plan to enter into additional agreements for launch services and launch insurance for these satellites. Under the Service Agreements, subject to certain terms and conditions, Partner has agreed to make service payments equal to 95% of the approved capital expenditures under the satellite procurement agreement (to be paid on a straight-line basis over the useful life of the satellites) and certain other costs incurred for the new satellites, as adjusted based on certain provisions, beginning with the Phase 2 Service Period.

Other Network Purchase Commitments

Other purchase commitments with vendors for our network total $4.1 million over the next year.

See Note 9: Commitments and Contingencies to our Consolidated Financial Statements for discussion on our contractual commitments.

Recently Issued Accounting Pronouncements

For a discussion of recent accounting guidance and the expected impact that the guidance could have on our Consolidated Financial Statements, see Note 1: Summary of Significant Accounting Policies in our Consolidated Financial Statements.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations are based on our Consolidated Financial Statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and assumptions that affect the amounts reported in our Consolidated Financial Statements and accompanying notes. Note 1: Summary of Significant Accounting Policies in our Consolidated Financial Statements contains a description of the accounting policies used in the preparation of our financial statements as well as the consideration of recently issued accounting standards and the estimated impact these standards will have on our financial statements. We evaluate our estimates on an ongoing basis, including those related to revenue recognition; property and equipment; and income taxes. We base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances. Actual amounts could differ significantly from these estimates under different assumptions and conditions.

We define a critical accounting policy or estimate as one that is both important to our financial condition and results of operations and requires us to make difficult, subjective or complex judgments or estimates about matters that are uncertain. We believe that the following are the critical accounting policies and estimates used in the preparation of our Consolidated Financial Statements. In addition, there are other items within our Consolidated Financial Statements that require estimates but are not deemed critical as defined in this paragraph.

Revenue Recognition

Our primary types of revenue include (i) service revenue from two-way voice communication, and one-way and two-way data transmissions between a mobile or fixed device, (ii) subscriber equipment revenue from the sale of fixed and mobile devices as well as other products and accessories, (iii) wholesale capacity service revenue from providing satellite network access and related services utilizing our satellite spectrum and network of satellites and gateways and (iv) service revenue from providing engineering and communication services to certain customers. The complexities or judgements involved in revenue recognition are discussed below.

If a contract includes more than one performance obligation, such as under the Service Agreements or when subscriber equipment is bundled with services in a multiple-element arrangement, we allocate the transaction price to each performance obligation in proportion to their standalone selling prices at contract inception and recognize them when, or as, each performance obligation is satisfied. Determination of the relative stand-alone selling prices is complex and involves judgement, as prices may vary based on many factors, such as promotions, customer, volume and/or type of equipment sold.

Service revenue is generally recognized over a period of time (consistent with the customer's receipt and consumption of the benefits of our performance) and revenue from the sale of subscriber equipment is recognized at a point in time (consistent with the transfer of risks and rewards of ownership of the hardware).

We record customer payments received in advance of the corresponding service period as deferred revenue. We assess the timing of the transfer of products or services to a customer as compared to the timing of payments made to us to determine whether a significant financing component exists. In general, our subscriber-driven contracts are paid monthly or annually and the time between cash collection and performance is less than one year. For certain payments made under the Service Agreements, the length of time between receipt of payment by Partner and the transfer of services by us is greater than twelve months. Accordingly, these payments made by Partner include a significant financing component.

For Duplex service revenue, we recognize revenue for monthly access fees in the period services are rendered. For annual plans whereby a customer prepays for a predetermined amount of minutes and data, revenue is recognized consistent with the customer's expected pattern of usage, based on historical experience because we believe that this method most accurately depicts the satisfaction of our obligation to the customer. For annual plans where the customer is charged an annual fee to access our system, we recognize revenue on a straight-line basis over the term of the plan.

For our subscriber-driven contracts, subscriber acquisition costs primarily include internal sales commissions and initial activation commissions as well as certain other costs, including but not limited to, promotional costs, cooperative marketing credits and shipping and fulfillment costs. We capitalize incremental costs to obtain a contract to the extent we expect to recover such costs. All other subscriber acquisitions costs are expensed at the time of the related sale.

For wholesale capacity services, we capitalize costs to fulfill a contract to the extent we expect to recover them and we also capitalize noncash consideration issued to Partner under the Service Agreements. Costs to fulfill a contract may include certain expenses incurred by us prior to the customer benefiting from the service, such as personnel and contractor costs and other operating expenses. Under the Service Agreements, we issued Partner the Warrants to purchase shares of Globalstar common stock; we recorded the Warrants at the estimated fair value of the consideration granted based on a Black-Scholes pricing model. The fair value of the Warrants was capitalized as a contract asset and will be recognized as a reduction of the transaction price over the estimated term of the Service Agreements.

Property and Equipment

The vast majority of our property and equipment costs are incurred related to the construction of our second-generation constellation, including an agreement executed in 2022 for the purchase of new satellites to replenish our existing satellite constellation, and ground station upgrades. Accounting for these assets requires us to make complex judgments and estimates. We capitalize costs associated with the design, manufacture, test and launch of our low earth orbit satellites. We capitalize costs associated with the design, manufacture and test of our ground stations and other capital assets. We track capitalized costs associated with our ground stations and other capital assets by fixed asset category and allocate them to each asset as it comes into service. For assets that are sold or retired, including satellites that are de-orbited and no longer providing services, we remove the estimated cost and accumulated depreciation. We recognize a loss from an in-orbit failure of a satellite equal to its net book value, if any, in the period it is determined that the satellite is not recoverable.

Estimating the useful life of our assets is complex and involves judgement. We evaluate the appropriateness of estimated depreciable lives assigned to our property and equipment and revise such lives to the extent warranted by changing facts and circumstances. If the useful life of our significant assets changes, this change could impact our operating results. The estimated useful lives of our assets is based on many factors, including estimated design life, information from our engineering department and our overall strategy for the use of the assets. A one year reduction in the estimated useful life of our second-generation satellites would result in an annual increase to depreciation expense of $5.2 million.

We review the carrying value of our assets for impairment whenever events or changes in circumstances indicate that the recorded value may not be recoverable. If indicators of impairment exist, we compare future undiscounted cash flows to the carrying value of the asset group. If an asset is not recoverable, its carrying value would be adjusted down to fair value and an impairment loss would be recorded. Key assumptions in our impairment tests include projected future cash flows, the timing of network upgrades and current discount rates. Additionally, from time to time, we perform profitability analyses to determine if investments in certain products and/or services remain viable. In the event we determine to no longer support a product or service, or that an asset is not expected to generate future benefit, the asset may be abandoned and an impairment loss may be recorded.

Income Taxes

We use the asset and liability method of accounting for income taxes. This method takes into account the differences between financial statement treatment and tax treatment of certain transactions. We recognize deferred tax assets and liabilities for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis. We measure deferred tax assets and liabilities using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Our deferred tax calculation requires us to make certain estimates about our future operations. Changes in state, federal and foreign tax laws, as well as changes in our financial condition or the carrying value of existing assets and liabilities, could affect these estimates. We recognize the effect of a change in tax rates as income or expense in the period that the rate is enacted; however, as we have a full valuation allowance on our deferred tax assets, there is no impact to the consolidated statements of operations and balance sheets.

GAAP requires us to assess whether it is more likely than not that we will be able to realize some or all of our deferred tax assets. If we cannot determine that deferred tax assets are more likely than not to be recoverable, GAAP requires us to provide a valuation allowance against those assets. This assessment takes into account factors including: (a) the nature, frequency, and severity of current and cumulative financial reporting losses; (b) sources of estimated future taxable income; and (c) tax planning strategies. We must weigh heavily a pattern of recent financial reporting losses as a source of negative evidence when determining our ability to realize deferred tax assets. Projections of estimated future taxable income exclusive of reversing temporary differences are a source of positive evidence only when the projections are combined with a history of recent profitable operations and can be reasonably estimated. Otherwise, GAAP requires that we consider projections inherently subjective and generally insufficient to overcome negative evidence that includes cumulative losses in recent years. If necessary and available, we would implement tax planning strategies to accelerate taxable amounts to utilize expiring carryforwards. These strategies would be a source of additional positive evidence supporting the realization of deferred tax assets.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Our services and products are sold, distributed or available in over 120 countries. Our international sales are denominated primarily in Canadian dollars, Brazilian reais and euros. In some cases, insufficient supplies of U.S. currency may require us to accept payment in other foreign currencies. We reduce our currency exchange risk from revenues in currencies other than the U.S. dollar by requiring payment in U.S. dollars whenever possible and purchasing foreign currencies on the spot market when rates are favorable. We currently do not purchase hedging instruments to hedge foreign currencies. We are obligated to enter into currency hedges with the lenders to the 2019 Facility Agreement no later than 90 days after any fiscal quarter during which more than 25% of revenues is denominated in a single currency other than U.S. or Canadian dollars. Otherwise, we cannot enter into hedging agreements other than interest rate cap agreements or other hedges described above without the consent of the agent for the 2019 Facility Agreement, and with that consent the counterparties may only be the lenders to the 2019 Facility Agreement.

We may be exposed to the risk of rising interest rates if our future borrowings bear interest at a floating rate.

We also have operations in Argentina, which is considered to have a highly inflationary economy. We continue to monitor the significant uncertainty surrounding current Argentinian exchange mechanisms. Operations in this country are not considered significant to our consolidated operations.

See Note 8: Fair Value Measurements in our Consolidated Financial Statements for discussion of our financial assets and liabilities measured at fair market value and the market factors affecting changes in fair market value of each.

Item 8. Financial Statements and Supplementary Data

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

	Page
Audited Consolidated Financial Statements of Globalstar, Inc.	44
Report of Ernst & Young LLP, independent registered public accounting firm (PCAOB ID 42)	44
Consolidated balance sheets at December 31, 2022 and 2021	47
Consolidated statements of operations for the years ended December 31, 2022, 2021 and 2020	48
Consolidated statements of comprehensive (loss) income for the years ended December 31, 2022, 2021 and 2020	49
Consolidated statements of stockholders' equity for the years ended December 31, 2022, 2021 and 2020	50
Consolidated statements of cash flows for the years ended December 31, 2022, 2021 and 2020	51
Notes to Consolidated Financial Statements	52

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Globalstar, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Globalstar, Inc. (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive (loss) income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2022 and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated March 1, 2023, expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the 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 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 financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the 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 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 account or disclosures to which it relates.

	Useful life of Space component assets
Description of the Matter	At December 31, 2022, the Company had $1.2 billion of Space component assets recorded as property and equipment. As discussed in Note 1 to the consolidated financial statements, the Company's Space component assets are depreciated on a straight-line basis over their estimated useful life, which is currently estimated to be 15 years. Management's estimate of the useful life of its Space component assets was based on estimated design life, information from the Company's engineering department and overall Company strategy for the use of the assets. Auditing the Company's estimate of the useful life of its Space component assets involved a high degree of subjectivity due to the application of management's judgment when evaluating the available information to determine the estimated useful life. The resulting estimated useful life has a significant effect on the timing of recognition of depreciation expense given the magnitude of the carrying amount of the Space component assets.

How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's process to determine the estimated useful life of its Space component assets, including controls over management's evaluation of the available information to determine the estimated useful life. Our testing of the Company's estimated useful life of the Space component assets included, among other procedures, evaluating the application of available information to determine the estimated useful life. We compared management's useful life to the manufacturer's estimated design life, publicly available information on the estimated useful life of similar assets, operation and performance of the assets per the Company's engineering group, and the life of its first-generation satellite constellation. Additionally, we evaluated the effect of changes, if any, in the Company's long-term strategy for use of the assets on the useful life estimate.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2020.

New Orleans, Louisiana
March 1, 2023

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Globalstar, Inc.

Opinion on Internal Control over Financial Reporting

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

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2022 and 2021, the related consolidated statements of operations, statements of comprehensive (loss) income, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes and our report dated March 1, 2023, expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ Ernst & Young LLP

New Orleans, Louisiana
March 1, 2023

GLOBALSTAR, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except par value and share data)

	December 31,			
	2022		2021	
ASSETS				
Current assets:				
Cash and cash equivalents	$	32,082	$	14,304
Accounts receivable, net of allowance for credit losses of $2,892 and $2,962, respectively		26,329		21,182
Inventory		9,264		13,829
Prepaid expenses and other current assets		13,569		19,558
Total current assets		81,244		68,873
Property and equipment, net		560,371		672,156
Operating lease right of use assets, net		30,859		32,041
Prepaid satellite construction costs and related customer receivable		122,496		—
Intangible and other assets, net of accumulated amortization of $10,908 and $11,189, respectively		38,425		41,036
Total assets	$	833,395	$	814,106
LIABILITIES AND STOCKHOLDERS' EQUITY				
Current liabilities:				
Accounts payable	$	3,843	$	6,247
Vendor financing		59,822		—
Accrued expenses		58,446		28,947
Payables to affiliates		326		444
Deferred revenue		74,639		25,927
Total current liabilities		197,076		61,565
Long-term debt		132,115		237,932
Operating lease liabilities		27,635		29,237
Deferred revenue, net		157,803		112,054
Other non-current liabilities		3,995		7,887
Total non-current liabilities		321,548		387,110
Commitments and contingent liabilities (Note 9)				
Stockholders' equity:				
Preferred Stock of $0.0001 par value; 99,700,000 and 100,000,000 shares authorized and none issued and outstanding at December 31, 2022 and 2021, respectively		—		—
Series A Preferred Stock of $0.0001 par value; 300,000 shares authorized and 149,425 issued and outstanding at December 31, 2022; no shares authorized and none issued and outstanding as of December 31, 2021		—		—
Voting Common Stock of $0.0001 par value; 2,150,000,000 shares authorized; 1,811,074,696 and 1,796,528,871 shares issued and outstanding at December 31, 2022 and 2021, respectively		181		180
Additional paid-in capital		2,345,612		2,146,710
Accumulated other comprehensive income		9,242		1,890
Retained deficit		(2,040,264)		(1,783,349)
Total stockholders' equity		314,771		365,431
Total liabilities and stockholders' equity	$	833,395	$	814,106

See accompanying notes to Consolidated Financial Statements.

GLOBALSTAR, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share data)

	Year Ended December 31,		
	2022	2021	2020
Revenue:			
Service revenue	$ 132,068	$ 106,464	$ 113,191
Subscriber equipment sales	16,436	17,833	15,296
Total revenue	148,504	124,297	128,487
Operating expenses:			
Cost of services (exclusive of depreciation, amortization and accretion shown separately below)	43,370	37,372	34,751
Cost of subscriber equipment sales	13,097	13,587	13,268
Cost of subscriber equipment sales - reduction in the value of inventory	8,553	1,004	662
Marketing, general and administrative	44,103	41,358	41,738
Reduction in the value of long-lived assets	166,526	242	416
Depreciation, amortization and accretion	93,884	96,237	96,815
Total operating expenses	369,533	189,800	187,650
Loss from operations	(221,029)	(65,503)	(59,163)
Other (expense) income:			
Gain on extinguishment of debt	2,790	3,098	—
Interest income and expense, net of amounts capitalized	(30,168)	(43,536)	(48,429)
Derivative (loss) gain	(805)	(1,043)	2,897
Foreign currency loss	(6,592)	(6,308)	(727)
Pension settlement loss	(1,501)	—	(2,075)
Other	463	368	(1,480)
Total other expense	(35,813)	(47,421)	(49,814)
Loss before income taxes	(256,842)	(112,924)	(108,977)
Income tax expense (benefit)	73	(299)	662
Net loss	$ (256,915)	$ (112,625)	$ (109,639)
Net loss attributable to common shareholders (Note 14)	$ (258,252)	$ (112,625)	$ (109,639)
Net loss per common share:			
Basic	$ (0.14)	$ (0.06)	$ (0.07)
Diluted	(0.14)	(0.06)	(0.07)
Weighted-average shares outstanding:			
Basic	1,800,825	1,765,139	1,642,359
Diluted	1,800,825	1,765,139	1,642,359

See accompanying notes to Consolidated Financial Statements.

GLOBALSTAR, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(In thousands)

	Year Ended December 31,		
	2022	**2021**	**2020**
Net loss	$ (256,915)	$ (112,625)	$ (109,639)
Other comprehensive income:			
Defined benefit pension plan liability adjustment	2,073	410	2,042
Net foreign currency translation adjustment	5,279	4,424	(1,537)
Total other comprehensive income	7,352	4,834	505
Total comprehensive loss	$ (249,563)	$ (107,791)	$ (109,134)

See accompanying notes to Consolidated Financial Statements.

GLOBALSTAR, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS’ EQUITY
(In thousands)

	Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Retained Deficit	Total
	Shares	Amount	Shares	Amount				
Balances – December 31, 2019	—	$ —	1,464,544	$ 146	$ 1,970,047	$ (3,449)	$ (1,559,401)	$ 407,343
Net issuance of restricted stock awards and recognition of stock-based compensation	—	—	7,637	1	4,766	—	—	4,767
Contribution of services	—	—	—	—	232	—	—	232
Issuance and recognition of stock-based compensation of employee stock purchase plan	—	—	2,253	—	1,048	—	—	1,048
Common stock issued in connection with conversion of Loan Agreement with Thermo	—	—	200,140	20	120,441	—	—	120,461
Common stock issued in connection with conversion of 2013 8.00% Notes	—	—	95	—	32	—	—	32
Impact of adoption of Credit Loss Standard	—	—	—	—	—	—	(1,684)	(1,684)
Other comprehensive income	—	—	—	—	—	505	—	505
Net loss	—	—	—	—	—	—	(109,639)	(109,639)
Balances – December 31, 2020	—	$ —	1,674,669	$ 167	$ 2,096,566	$ (2,944)	$ (1,670,724)	$ 423,065
Net issuance of restricted stock awards and employee stock options and recognition of stock-based compensation	—	—	4,937	1	5,543	—	—	5,544
Contribution of services	—	—		—	188	—	—	188
Issuance and recognition of stock-based compensation of employee stock purchase plan	—	—	1,887	—	747	—	—	747
Issuance of stock for warrant exercises	—	—	115,036	12	43,666	—	—	43,678
Other comprehensive income	—	—	—	—	—	4,834	—	4,834
Net loss	—	—	—	—	—	—	(112,625)	(112,625)
Balances – December 31, 2021	—	$ —	1,796,529	$ 180	$ 2,146,710	$ 1,890	$ (1,783,349)	$ 365,431
Net issuance of restricted stock awards and employee stock options and recognition of stock-based compensation	—	—	11,577	1	10,588	—	—	10,589
Contribution of services	—	—	—	—	188	—	—	188
Issuance and recognition of stock-based compensation of employee stock purchase plan	—	—	716	—	1,135	—	—	1,135
Common stock issued in connection with conversion of 2013 8.00% Notes	—	—	2,253	—	2,548	—	—	2,548
Fair value of Warrants granted to Partner	—	—	—	—	48,337	—	—	48,337
Issuance of Series A Preferred Stock	149	—	—	—	105,342	—	—	105,342
Gain on extinguishment of 2019 Facility Agreement with Thermo	—	—	—	—	30,764	—	—	30,764
Other comprehensive income	—	—	—	—	—	7,352	—	7,352
Net loss	—	—	—	—	—	—	(256,915)	(256,915)
Balances – December 31, 2022	149	$ —	1,811,075	$ 181	$ 2,345,612	$ 9,242	$ (2,040,264)	$ 314,771

See accompanying notes to Consolidated Financial Statements.

GLOBALSTAR, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		
	2022	2021	2020
Cash flows provided by operating activities:			
Net loss	$ (256,915)	$ (112,625)	$ (109,639)
Adjustments to reconcile net loss to net cash provided by operating activities:			
Depreciation, amortization and accretion	93,884	96,237	96,815
Change in fair value of derivatives	805	1,043	(2,897)
Stock-based compensation expense	10,754	6,729	5,902
Noncash consideration, net, associated with wholesale capacity contract	(292)	—	—
Amortization of deferred financing costs	520	2,562	4,243
Reduction in the value of long-lived assets and inventory	175,079	1,246	1,078
Provision for credit losses	1,087	936	1,656
Noncash interest and accretion expense	29,711	35,897	33,847
Gain on extinguishment of debt	(2,790)	(3,098)	—
Loss on pension settlement	1,501	—	2,075
Noncash revenue recognized from terminated contract	—	—	(2,916)
Noncash reversal of tariff accrual	—	(1,023)	—
Unrealized foreign currency loss	6,615	6,394	1,362
Other, net	(2,631)	(1,420)	106
Changes in operating assets and liabilities:			
Accounts receivable	(1,009)	1,361	(8,494)
Inventory	(2,380)	(80)	2,176
Prepaid expenses and other current assets	952	(5,266)	981
Other assets	(183)	82	(890)
Accounts payable and accrued expenses	(11,371)	(3,647)	(197)
Payables to affiliates	(118)	(136)	319
Other non-current liabilities	(2,561)	(609)	(60)
Deferred revenue	23,142	107,298	(3,252)
Net cash provided by operating activities	63,800	131,881	22,215
Cash flows used in investing activities:			
Network upgrades (including capitalized interest)	(18,233)	(37,432)	(7,317)
Satellite construction costs	(14,000)	—	—
Property and equipment additions	(7,076)	(6,307)	(5,157)
Sale of property and equipment	—	350	—
Purchase of intangible assets	(643)	(1,797)	(2,062)
Net cash used in investing activities	(39,952)	(45,186)	(14,536)
Cash flows (used in) provided by financing activities:			
Principal payments of the 2019 Facility Agreement	(6,341)	—	—
Principal payments of the 2009 Facility Agreement	—	(186,990)	(3,373)
Payments for debt and equity issuance costs	(626)	(286)	(1,074)
Proceeds from issuance of common stock and exercise of options	919	747	638
Net proceeds from common stock offering and exercise of warrants	—	43,678	—
Premium refund from the 2009 Facility Agreement	—	2,569	—
Proceeds from PPP Loan	—	—	4,973
Net cash (used in) provided by financing activities	(6,048)	(140,282)	1,164
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(22)	(132)	52
Net increase (decrease) in cash, cash equivalents and restricted cash	17,778	(53,719)	8,895
Cash, cash equivalents and restricted cash, beginning of period	14,304	68,023	59,128
Cash, cash equivalents and restricted cash, end of period	$ 32,082	$ 14,304	$ 68,023

	As of December 31,		
	2022	2021	2020
Reconciliation of cash, cash equivalents and restricted cash			
Cash and cash equivalents	$ 32,082	$ 14,304	$ 13,330
Restricted cash (See Note 6 for further discussion on restrictions)	—	—	54,693
Total cash, cash equivalents and restricted cash shown in the statement of cash flows	$ 32,082	$ 14,304	$ 68,023

Supplemental disclosure of cash flow information:			
Cash paid for:			
Interest	$ —	$ 5,534	$ 10,918
Income taxes	197	188	68

	Year Ended December 31,		
	2022	2021	2020
Supplemental disclosure of non-cash financing and investing activities:			
Increase in capitalized accrued interest for network upgrades	$ 12,164	$ 2,973	$ 1,638
Capitalized accretion of debt discount and amortization of prepaid financing costs	1,830	612	447
Satellite construction costs (including prepaid amounts) acquired through vendor financing arrangement	59,822	—	—
Satellite construction assets in accrued expenses	36,139	—	—
Principal amount of 2019 Facility Agreement converted into preferred equity	149,425	—	—
Forgiveness of principal and interest of PPP Loan	—	5,030	—
Principal amount of Loan Agreement with Thermo converted into common stock	—	—	137,366
Reduction of debt discount and issuance costs due to conversion of Loan Agreement with Thermo	—	—	17,963
Fair value of common stock issued upon conversion of Loan Agreement with Thermo	—	—	84,059
Reduction in derivative liability due to conversion of Loan Agreement with Thermo	—	—	1,058

See accompanying notes to Consolidated Financial Statements.

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Business

Globalstar, Inc. (“Globalstar” or the “Company”) provides Mobile Satellite Services (“MSS”) including voice and data communications and wholesale capacity services through its global satellite network. The Company’s only reportable segment is its MSS business. Thermo Companies, through commonly controlled affiliates, (collectively, “Thermo”) is the principal owner and largest stockholder of Globalstar.

Globalstar currently provides the following communications services:

- two-way voice communication and data transmissions via the GSP-1600 and GSP-1700 phone ("Duplex");
- one-way or two-way communications and data transmissions using mobile devices, including the SPOT family of products, such as SPOT X ®, SPOT Gen4™ and SPOT Trace®, that transmit messages and the location of the device ("SPOT");
- one-way data transmissions using a mobile or fixed device that transmits its location and other information to a central monitoring station, including commercial IoT products, such as the battery- and solar-powered SmartOne, STX-3, Integrity 150, ST-150 and ST100 ("Commercial IoT");
- satellite network access and related services utilizing our satellite spectrum and network of satellites and gateways ("Wholesale Capacity Services"); and
- engineering and other communication services using the Company's MSS and terrestrial spectrum licenses ("Engineering and Other").

Recent Developments

Service Agreements

On September 7, 2022, Apple Inc. (“Partner”) announced new satellite-enabled services for certain of its products (the “Services”). The Company will be the satellite operator for these Services pursuant to the agreement (the “Service Agreement”) first disclosed in the Company’s Form 10-K for the year ended December 31, 2019, and certain related ancillary agreements (such agreements, together with the Service Agreement, as each is amended from time to time, the “Service Agreements”).

Since execution of the Service Agreements in 2020, the parties have completed several milestones including (i) a feasibility phase, (ii) material upgrades to Globalstar’s ground network, (iii) construction of 11 new gateways around the world, (iv) the successful launch of the ground spare satellite, and (v) rigorous in-field system testing.

The Service Agreements generally require Globalstar to allocate network capacity (as described below) to support the Services, and Partner to enable Band 53/n53 for use in cellular-enabled devices designated by Partner for use with the Services.

Partner made Services available to its customers in November 2022 (the “Service Launch”).

On February 27, 2023, Globalstar and its Partner agreed to amend the Service Agreements to provide for, among other things, Partner’s prepayment of $252 million to the Company (the “Prepayment”). The Company plans to use the proceeds of the Prepayment to pay amounts currently due and payable, as well as other amounts as they become due and payable, under the satellite procurement agreement with Macdonald, Dettwiler and Associates Corporation ("MDA"), as well as launch, insurance and ancillary costs incurred for the construction and launch of these satellites. The Prepayment replaces the Company's obligation to seek third-party financing for these costs as previously required under the Service Agreements and will be funded as needed on a quarterly basis subject to the terms in the agreement. The remaining amount of the satellite costs is expected to be funded through the Company's operating cash flows.

The amount of the Prepayment and fees payable thereon will be recouped from amounts payable by Partner for services provided by the Company under the Service Agreements. The Prepayment is expected to be recouped in installments for a period of 16 quarters beginning no later than the third quarter of 2025. The Prepayment may also be repaid over time through excess cash flow sweeps or voluntary prepayments, as provided under the terms of the prepayment agreement. For as long as any portion of the Prepayment is outstanding, the Company will be subject to certain covenants including (i) maintenance of a minimum cash balance of $30 million, (ii) interest coverage and leverage ratios, and (iii) other customary negative covenants, including limitations on certain asset transfers, expenditures and investments.

Amounts payable by the Company in connection with the Prepayment will be guaranteed by Thermo, subject to applicable shareholder approval. Prior to such shareholder approval, Thermo has agreed to provide support of certain of the Company’s obligations under the Service Agreements, the Satellite Procurement Agreement, and certain related contracts directly to the Partner.

As conditions precedent to Prepayment funding, the Company must (i) convert or refinance the remaining loans outstanding under the 2019 Facility Agreement by March 13, 2023 and (ii) grant Partner a first-priority lien in the Company’s assets to secure its obligations under the Service Agreements.

Discontinuation of Second-Generation Duplex Products and Services

The Company has been evaluating the continuation of second-generation Duplex services in light of other potential uses for the Company’s capacity, such as those within the Service Agreements. In early 2021, the Company terminated its second-generation Duplex services, which supported approximately 1,800 subscribers, to allow extended testing of the Services to Partner; however, such termination was considered temporary unless or until Partner announced its intent to proceed with launch of the Services. Due to this shift in strategy triggered by Partner's September 2022 announcement, the Company evaluated the recoverability of its second-generation Duplex assets, including gateway property, prepaid licenses and royalties, and inventory during the third quarter of 2022. As a result of this shift in strategy, the Company recorded reductions in the value of equipment and long-lived assets totaling $174.3 million during the third quarter of 2022 (refer to Note 8: Fair Value Measurements for further discussion). The Company will continue to support first-generation Duplex services, including voice communications and data transmissions.

Refer to Note 2: Revenue, Note 3: Leases, Note 4: Property and Equipment and Note 9: Commitments and Contingencies for further discussion of the financial statement impact of the Service Agreements.

Use of Estimates in Preparation of Financial Statements

The preparation of Consolidated Financial Statements in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from estimates. Certain reclassifications have been made to prior year Consolidated Financial Statements to conform to current year presentation. The Company evaluates estimates on an ongoing basis.

Principles of Consolidation

The Consolidated Financial Statements include the accounts of Globalstar and all its subsidiaries. All significant intercompany transactions and balances have been eliminated in the consolidation.

Cash and Cash Equivalents

Cash and cash equivalents consist of cash on hand and highly liquid investments with original maturities of three months or less. Cash deposited in institutional money market funds, regular interest-bearing depository accounts and non-interest-bearing depository accounts are classified as cash and cash equivalents on the accompanying consolidated balance sheets.

Concentration of Credit Risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist principally of cash and cash equivalents and restricted cash. Cash and cash equivalents and restricted cash consist primarily of highly liquid short-term investments deposited with financial institutions that are of high credit quality.

The Company performs credit evaluations of its customers’ financial condition and records reserves to provide for estimated credit losses. For the year ended December 31, 2022, our Partner under the Service Agreements was responsible for 24% of our revenue and 86% of our receivable balance with no other customer responsible for more than 10% of our revenue or accounts receivable balance.

Accounts and Notes Receivable

The Company records trade accounts receivable from its customers when it has a contractual right to receive payment either on demand or on fixed or determinable dates in the future. Receivables are recorded when the right to consideration from the customer becomes unconditional, which is generally upon billing or upon satisfaction of a performance obligation, whichever is earlier. Accounts receivable are uncollateralized, without interest, and consist of receivables from wholesale capacity services and the sale of Globalstar services and equipment. The Company also has agreements whereby it acts as an agent to procure goods and perform services on behalf of Partner under the Service Agreements. Payment is generally due within 45 days of the invoice date for this customer. For service, payment is generally due from subscribers within thirty days of the invoice date and for equipment customers, payment is generally due within thirty to sixty days of the invoice date, or, for some customers, may be made in advance of shipment.

The Company performs ongoing credit evaluations of its customers and impairs receivable balances by recording specific allowances for credit losses based on factors such as customer credit ratings, supportable and reasonable current trends, the length of time the receivables are past due and historical collection experience. The Company believes that historical collection experience is the most reasonable basis for predicting future performance. One type of the Company's contract assets is customer receivables and, as such, historical delinquency percentages are generally consistent over time. The estimate of the allowance for subscriber credit losses is computed using aging schedules by type of revenue (service and subscriber equipment), by product (Duplex, SPOT and Commercial IoT) and by country. As discussed above, accounts receivable are considered past due in accordance with the contractual terms of the applicable arrangements. The Company applies a loss rate to its portfolio of subscriber trade receivables based on past-due status and records an allowance for credit losses, which represents the expected losses of those trade receivables over their estimated contractual life. The estimated life may vary by service and product type, but is generally less than one year. Allowances are generally recorded for all aging categories of outstanding receivables, including those in the current category. Accounts receivable balances that are determined likely to be uncollectible are included in the allowance for credit losses. After attempts to collect a receivable have failed, the receivable is written off against the allowance. The estimate of the allowance for credit losses on wholesale capacity receivables is based primarily on customer payment history and credit rating. The Company believes that the risk of loss is extremely remote for this category of outstanding receivables.

The following is a summary of the activity in the allowance for credit losses (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Balance at beginning of period	$ 2,962	$ 4,352	$ 2,952
Impact of adoption of ASU 2016-13	—	—	1,684
Provision, net of recoveries	1,087	409	1,656
Write-offs and other adjustments	(1,157)	(1,799)	(1,940)
Balance at end of period	$ 2,892	$ 2,962	$ 4,352

Inventory

Inventory consists primarily of purchased products, including subscriber equipment devices, which work on the Company's network, as well as component parts and other chips used in the manufacture of subscriber equipment devices, of approximately $9.0 million and $9.6 million as of December 31, 2022 and 2021, respectively, as well as ground infrastructure assets expected to be used as spare parts of approximately $0.3 million and $4.2 million as of December 31, 2022 and 2021, respectively. Inventory is stated at the lower of cost or net realizable value. Cost is computed using the first-in, first-out (FIFO) method. Inventory write downs are measured as the difference between the cost of inventory and the net realizable value and are recorded as a cost of subscriber equipment sales - reduction in the value of inventory in the Company's Consolidated Financial Statements. Product sales and returns from the previous 12 months and future demand forecasts are reviewed and excess and obsolete inventory is written off, as applicable.

For each the years ended December 31, 2022, 2021 and 2020, the Company wrote down the value of inventory by $8.6 million, $1.0 million and $0.7 million, respectively, after adjusting for changes in net realizable value.

In 2022, the Company wrote down the value of equipment consisting of second-generation Duplex assets, including finished goods, chips and component parts to be used in manufacturing such devices as well as second-generation Duplex gateway spare parts, totaling $6.9 million. Additionally, the Company recorded amounts prepaid to its product manufacturer related to second-generation Duplex products, previously included in Prepaid and other current assets on its consolidated balance sheets totaling

$1.6 million. The Company concluded that there was no remaining net realizable value of its second-generation Duplex inventory including prepayments to its product manufacturer.

In 2021, the Company wrote off certain Sat-Fi2® materials that were not likely to be used in production as well as defective inventory units that were no longer saleable.

In 2020, the Company discontinued production of a second-generation Duplex device, which was the majority of the write down recorded. The remaining reduction in value of inventory recorded during 2020 was driven by an evaluation of excess or obsolete inventory related to end of life products and technology.

Property and Equipment

The Globalstar System includes costs for the design, manufacture, test and launch of a constellation of low earth orbit satellites (the “Space Component”), and primary and backup control centers and gateways (the “Ground Component”). Property and equipment is stated at cost, net of accumulated depreciation.

Costs associated with the design, manufacture, test and launch of the Company’s Space and Ground Components are capitalized. Capitalized costs associated with the Company’s Space Component, Ground Component, and other assets are tracked by fixed asset category and are allocated to each asset as it comes into service. Generally, when a satellite is incorporated into the constellation, the Company begins depreciation on the date the satellite is placed into service, which was the point that the satellite reaches its orbital altitude, over its estimated depreciable life. In June 2022, the Company launched an on-ground spare satellite. The costs associated with the construction and launch of this spare satellite were placed into service after its successful launch since this satellite is expected to remain as an in-orbit spare and will only be raised to its operational orbit at a future date if needed.

The Company capitalizes interest costs associated with the costs of assets in progress. Capitalized interest is added to the cost of the underlying asset and is amortized over the depreciable life of the asset after it is placed into service. As the Company’s construction in progress increases, the Company capitalizes more interest, resulting in a lower amount of net interest expense recognized under U.S. GAAP.

Depreciation is provided using the straight-line method over the estimated useful lives of the respective assets as follows:

Space Component - 15 years from the commencement of service
Ground Component - 7 or 15 years from commencement of service
Software, Facilities & Equipment - 3 to 10 years
Buildings - 18 years
Leasehold Improvements - Shorter of lease term or the estimated useful lives of the improvements

The estimated useful lives of the Company's Space and Ground components were based on estimated design life, information from the Company's engineering department and overall Company strategy for the use of these assets. The Company evaluates and revises the estimated depreciable lives assigned to property and equipment based on changes in facts and circumstances. When changes are made to estimated useful lives, the remaining carrying amounts are depreciated prospectively over the remaining useful lives.

For assets that are sold or retired, including satellites that are de-orbited and no longer providing services, the estimated cost and accumulated depreciation is removed from property and equipment.

The Company assesses the impairment of property and equipment whenever events or changes in circumstances indicate that the recorded value may not be recoverable. Recoverability of assets is measured by comparing the carrying amounts of the assets to the estimated future undiscounted cash flows, excluding financing costs. If the asset is not recoverable, its carrying value would be adjusted down to fair value and an impairment loss would be recorded. Additionally, the Company routinely performs profitability analyses to determine if investments in certain products and/or services remain viable. In the event the Company decides not to support a product or service, or determines that an asset is not expected to generate future benefit, the asset may be abandoned and an impairment loss may be recorded on the associated assets.

Assets held for sale are carried at the lower of cost or fair value less estimated cost to sell; these assets are generally classified as current on the Company's consolidated balance sheets as the disposal of these assets is expected within one year.

Leases

The Company has operating and finance leases for facilities and equipment around the world, including corporate offices, satellite control centers, ground control centers, gateways and certain equipment.

Upon inception of a contract, the Company evaluates if the contract, or part of the contract, contains a lease. A lease conveys the right to control the use of an identified asset for a period of time in exchange for consideration. Leases include both a right-of-use asset and a lease liability. The right-of-use asset represents the Company’s right to use the underlying asset in the lease. Certain initial direct costs associated with consummating a lease are included in the initial measurement of the right-of-use asset. The right-of-use asset also includes prepaid lease payments and lease incentives. The lease liability represents the present value of the remaining lease payments discounted using the implicit rate in the lease on the lease commencement date. For leases in which the implicit rate is not readily determinable, an estimated incremental borrowing rate is used, which represents a rate of interest that the Company would pay to borrow on a collateralized basis over a similar term. The Company has elected to combine lease and non-lease components, if applicable.

For operating leases, the Company records lease expense on a straight-line basis over the lease term in either marketing, general and administrative expense or cost of services, depending on the nature of the underlying asset. For finance leases, the Company records the amortization of the right-of-use asset through depreciation, amortization and accretion expense and records the interest expense on the lease liability through interest expense, net, using the effective interest method.

Variable lease payments are payments made to a lessor due to changes in circumstances occurring after the commencement date. Variable lease payments dependent upon an index or rate are included in the measurement of the lease liability; all other variable lease payments are not included in the measurement of the lease liability and recognized when incurred. Variable lease payments excluded from the measurement of the lease liability are uncommon and, when incurred, are immaterial for the Company.

The Company’s existing leases have remaining lease terms of less than 1 year to 19 years. Lease terms include renewal or termination options that the Company is reasonably certain to exercise. For leases with a term of twelve months or less, the Company does not record a right-of-use asset and associated lease liability on its consolidated balance sheet.

The Company reviews the carrying value of its right-of-use assets for impairment whenever events or changes in circumstances indicate that the recorded value may not be recoverable. Recoverability of assets is measured by comparing the carrying amounts of the assets to the estimated future undiscounted cash flows, excluding financing costs. If a right-of-use asset is not recoverable, its carrying value would be adjusted down to fair value and an impairment loss would be recorded.

Derivative Instruments

Upon inception of a contract, the Company evaluates if the contract contains a derivative instrument. The Company has financing arrangements that are hybrid instruments that contain embedded derivative features. Derivative instruments are recognized as either assets or liabilities in the consolidated balance sheets and are measured at fair value with gains or losses recognized in earnings. The Company determines the fair value of derivative instruments based on available market data and assumptions developed by management using appropriate valuation models.

Deferred Financing Costs

Deferred financing costs are those costs directly incurred in issuing long-term debt or equity. Costs associated with obtaining long-term debt are amortized as additional interest expense over the expected term of the corresponding instrument and are recorded on the Company's consolidated balance sheets as a reduction in the carrying amount of the related debt liability. The Company classifies deferred financing costs consistent with the classification of the related debt outstanding at the end of the reporting period. As of December 31, 2022 and 2021, the Company had net deferred financing costs of $11.1 million and $27.3 million, respectively.

Fair Value of Financial Instruments

The Company believes it is not practicable to determine the fair value of the 2019 Facility Agreement. Interest rates and other terms for long-term debt are not readily available and generally involve a variety of factors, including due diligence by the debt holders. The Company's vendor financing arrangement is recorded at net carrying value, which approximates fair value. Prior to conversion in the first quarter of 2022, the fair value of the Company’s 8.00% Convertible Senior Notes Issued in 2013 (“2013 8.00% Notes”) was calculated using inputs consistent with those used to calculate the fair value of the derivatives embedded in these instruments.

Litigation, Commitments and Contingencies

The Company is subject to various claims and lawsuits that arise in the ordinary course of business. Estimating liabilities and costs associated with these matters requires judgment and assessment based on professional knowledge and experience of our management and legal counsel. When a loss is considered probable and reasonably estimable, a liability is recorded for the Company's best estimate. If there is a range of loss, the Company will record a reserve based on the low end of the range, unless facts and circumstances can support a different point in the range. When a loss is probable, but not reasonably estimable, disclosure is provided, as considered necessary. Reserves for potential claims or lawsuits may be relieved if the loss is no longer considered probable. The ultimate resolution of any such exposure may vary from earlier estimates as further facts and circumstances become known.

Gain/Loss on Extinguishment of Debt

Gain or loss on extinguishment of debt generally is recorded upon an extinguishment of a debt instrument or the conversion of certain of the Company’s convertible notes. Gain or loss on extinguishment of debt is calculated as the difference between the reacquisition price and net carrying amount of the debt, which includes unamortized debt issuance costs and any derivative instruments, and is recorded as an extinguishment gain or loss in the Company’s consolidated statement of operations.

Revenue Recognition and Deferred Revenue

Revenue consists primarily of satellite voice and data service revenue, revenue generated from the sale of fixed and mobile devices, revenue generated from providing satellite network access and related services utilizing the Company's satellite spectrum and network of satellite and gateways, and revenue from providing engineering and other communication services. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer. Each type of revenue is a separate performance obligation with distinct deliverables and is therefore accounted for discretely. Revenue is measured based on the consideration specified in a contract with a customer, adjusted for credits and discounts, as applicable, and is recognized when the Company satisfies a performance obligation by transferring control over a product or service to a customer.

Generally, service revenue is recognized over a period of time and revenue from the sale of subscriber equipment is recognized at a point in time. The recognition of revenue for service is over time as the customer simultaneously receives and consumes the benefits of the Company’s performance over the contract term. The recognition of revenue for subscriber equipment is at a point in time as the risks and rewards of ownership of the hardware transfer to the customer generally upon shipment, which is when legal title of the product transfers to the customer, among other things (as discussed further below).

The Company does not record sales taxes, telecommunication taxes or other governmental fees collected from customers in revenue. The Company excludes these taxes from the measurement of contract transaction prices.

The Company receives payment from customers in accordance with billing statements or invoices for customer contracts; these payments may be in advance or arrears of services provided to the customer by the Company. Customer payments received in advance of the corresponding service period are recorded as deferred revenue.

Upon activation of a Globalstar device, certain customers are charged an activation fee, which is recognized over the term of the expected customer life. Credits granted to customers are expensed or charged against revenue or accounts receivable over the remaining term of the contract. Under the Service Agreements, the Company issued Partner the Warrants to purchase shares of Globalstar common stock; the Warrants were recorded at the estimated fair value of the consideration granted based on a Black-Scholes pricing model. The fair value of the Warrants was capitalized as a contract asset and will be recognized as a reduction of the transaction price over the estimated term of the Service Agreements.

Estimates related to earned but unbilled service revenue are calculated primarily using current subscriber data, including plan subscriptions and usage between the end of the billing cycle and the end of the period, or in accordance with the terms of the customer contract for satellite network access services. The recognition of service revenue related to amounts allocated to performance obligations that were satisfied (or partially satisfied) in a previous period is not material to the Company’s financial statements. Amounts related to earned but unbilled revenue from the sale of subscriber equipment are recognized if hardware is shipped prior to the invoice being generated. This situation may result from multi-deliverable contracts, whereby equipment and service revenue are bundled and billed over time to a single customer.

Provisions for estimated future warranty costs, returns and rebates are recorded as a cost of sale, or a reduction to revenue, as applicable. These costs are based on historical trends and the provision is reviewed regularly and periodically adjusted to reflect changes in estimates.

Certain contracts with customers may contain a financing component. Under ASC 606, an entity should adjust the promised amount of the consideration for the effects of time value of money if the timing of the payments agreed upon by the parties to the contract provides the customer or the entity with a significant benefit of financing for the transfer of goods or services to the customer. For certain payments associated with services provided under the Service Agreements, the length of time between receipt of payment by the customer and transfer of services by the Company is greater than one year. Accordingly, payments made by Partner include a significant financing component. The Company accretes interest expense using the effective interest rate method over the period in which these advance payments are outstanding. The rate in which interest is computed is based on rates implicit in the Service Agreements. For the Company's subscriber contracts, transactions with a significant financing component are infrequent and not considered material to the Company as the time between cash collection and performance is generally less than one year.

The following describes the principal activities from which the Company generates its revenue.

Duplex Service Revenue. The Company recognizes revenue for monthly access fees in the period services are rendered. The Company offers certain annual plans whereby a customer prepays for a predetermined amount of minutes and data. In these cases, revenue is recognized consistent with a customer's expected pattern of usage based on historical experience because the Company believes that this method most accurately depicts the satisfaction of the Company's obligation to the customer. This usage pattern is typically seasonal and highest in the second and third calendar quarters of the year. The Company offers other annual plans whereby the customer is charged an annual fee to access the Company’s system with an unlimited amount of usage. Annual fees for unlimited plans are recognized on a straight-line basis over the term of the plans.

SPOT Service Revenue. The Company sells SPOT services as monthly or annual plans and recognizes revenue on a straight-line basis over the service term, beginning when the service is activated by the customer.

Commercial IoT Service Revenue. The Company sells Commercial IoT services as monthly or annual plans and recognizes revenue ratably over the service term or as service is used, beginning when the service is activated by the customer.

Wholesale Capacity Service Revenue: The Company provides wholesale capacity services to Partner under the Service Agreements. The Company allocates the transaction price under the Service Agreements to each performance obligation generally in proportion to their relative stand-alone selling prices. Revenue is recognized when the performance obligations are performed, the timing of which may involve complex judgements by management. Although the Service Agreements have no expiration date, the Company estimated its contract term based on the useful life of its existing satellite network and the expected useful life of the new satellite network under construction.

Equipment Revenue. Subscriber equipment revenue represents the sale of fixed and mobile user terminals, SPOT and Commercial IoT products, and accessories. The Company recognizes revenue upon shipment provided control has transferred to the customer. Indicators of transfer of control include, but are not limited to; 1) the Company’s right to payment, 2) the customer has legal title of the equipment, 3) the Company has transferred physical possession of the equipment to the customer or carrier, and 4) the customer has significant risks and rewards of ownership of the equipment. The Company sells equipment designed to work on its network through various channels, including through partners as well as direct to consumers or other businesses by its global sales team and through its e-commerce website. The sales channel depends primarily on the type of equipment and geographic region. Promotional rebates are offered from time to time. A reduction to revenue is recorded to reflect the lower transaction price based on an estimate of the customer take rate at the time of the sale using primarily historical data. This estimate is adjusted periodically to reflect actual rebates given to the Company’s customers. Shipping and handling costs associated with outbound freight after control over a product has transferred to a customer are accounted for as a fulfillment cost and are included in cost of subscriber equipment sales.

Engineering and Other Service Revenue. Other service revenue includes primarily revenue associated with engineering and other communication services using the Company's MSS and terrestrial spectrum licenses. The revenue associated with these engineering services is generally recorded over time as the services are rendered, and the Company's obligation to the customer is satisfied.

Multiple-Element Arrangement Contracts. At times, the Company will sell subscriber equipment through multiple-element arrangement contracts with services. When the Company sells subscriber equipment and services in bundled arrangements and determines that it has separate performance obligations, the Company allocates the bundled contract price among the various performance obligations based on relative stand-alone selling prices at contract inception of the distinct goods or services underlying each performance obligation and recognizes revenue when, or as, each performance obligation is satisfied.

Stock-Based Compensation

The Company recognizes compensation expense in the financial statements for both employee and non-employee share-based awards based on the grant date fair value of those awards. The Company uses the Black-Scholes option pricing model to estimate the fair value of stock option awards on the date of grant. For restricted stock awards and units, the fair value is determined from the stock price on the grant date. The Company's estimate of the forfeiture rate of its share-based awards also impacts the timing of expense recorded over the vesting period of the award. The Company's estimate for pre-vesting forfeitures is recognized over the requisite service periods of the awards on a straight-line basis, which is generally commensurate with the vesting term. For share-based awards with a performance condition that affects vesting, the Company recognizes compensation cost for awards if and when the performance condition is probable of achievement.

Foreign Currency

The functional currency of the Company’s foreign consolidated subsidiaries is generally their local currency, except in certain scenarios, including when the subsidiary operates in a hyperinflationary economy, such as Venezuela and Argentina. Assets and liabilities of its foreign subsidiaries are translated into United States dollars based on exchange rates at the end of the reporting period. Income and expense items are translated at the average exchange rates prevailing during the reporting period. For 2022, 2021 and 2020, the foreign currency translation adjustments were net gains of $5.3 million, net gains of $4.4 million and net losses of $1.5 million, respectively. Foreign currency transaction gains/losses were approximately net losses of $6.6 million, net losses of $6.3 million and net losses of $0.7 million for each of 2022, 2021, and 2020, respectively.

Asset Retirement Obligation

Liabilities arising from legal obligations associated with the retirement of the Company's gateway long-lived assets are measured at fair value and recorded as a liability. Upon initial recognition of a liability for retirement obligations, the Company also capitalizes, as part of the asset carrying amount, the estimated costs associated with its expected retirement. This asset is depreciated over the life of the gateway to be retired. Accretion of the asset retirement obligation liability and depreciation of the related assets are included in depreciation, amortization and accretion in the accompanying consolidated statements of operations. As of December 31, 2022 and 2021, the Company had accrued approximately $3.0 million and $2.5 million, respectively, for asset retirement obligations. During 2022, the Company continued the expansion of its gateway footprint in connection with the Service Agreements, which resulted in the commencement of new leases and the installation of new equipment; as a result of this expansion, the Company established new asset retirement obligations resulting in a total increase to the liability of $0.5 million during 2022. There were no settlements during 2022. The Company believes this estimate will be sufficient to satisfy the Company’s obligation under site leases to remove its gateway equipment and restore the lease sites to their original condition.

Warranty Expense

Warranty terms extend from 90 days on equipment accessories to one year for fixed and mobile user terminals. A provision for estimated future warranty costs is recorded as cost of sales when products are shipped. Warranty costs are based on historical trends in warranty charges as a percentage of gross product shipments. The resulting accrual is reviewed regularly and periodically adjusted to reflect changes in warranty cost estimates.

Research and Development Expenses

Research and development costs were $0.5 million, $1.0 million and $1.9 million for 2022, 2021 and 2020, respectively. These costs are expensed as incurred as cost of services and include primarily the cost of new product development, chip set design and other engineering work.

Income Taxes

The Company is taxed as a C corporation for U.S. tax purposes. The Company recognizes deferred tax assets and liabilities for future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis, operating losses and tax credit carryforwards. The Company measures deferred tax assets and liabilities using tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The Company recognizes the effect on deferred tax assets and liabilities of a change in tax rates in income in the period that includes the enactment date; however, as the Company has a full valuation allowance on its deferred tax assets, there is no impact to the consolidated statements of operations and balance sheets.

The Company recognizes valuation allowances to reduce deferred tax assets to the amount that is more likely than not to be realized. In assessing the likelihood of realization, management considers: (i) future reversals of existing taxable temporary differences; (ii) future taxable income exclusive of reversing temporary differences and carryforwards; (iii) taxable income in prior carry-back year(s) if carry-back is permitted under applicable tax law; and (iv) tax planning strategies.

Comprehensive (Loss) Income

All components of comprehensive (loss) income, including the minimum pension liability adjustment and foreign currency translation adjustment, are reported in the financial statements in the period in which they are recognized. Comprehensive (loss) income is defined as the change in equity during a period from transactions and other events and circumstances from non-owner sources.

Earnings (Loss) Per Share

Basic earnings (loss) per share is computed by dividing income (loss) available to common stockholders by the weighted average number of shares of common stock outstanding during the period. In periods of net income, the numerator used to calculate diluted EPS includes the effect of dilutive securities, including interest expense, net, and derivative gains or losses reflected in net income (loss) as well as the effect of dividends attributable to preferred shareholders. Common stock equivalents are included in the calculation of diluted earnings per share only when the effect of their inclusion would be dilutive. Prior to their conversion, the effect of potentially dilutive common shares for the Company's convertible notes were calculated using the if-converted method. Generally, for all other potentially dilutive common shares, the effect is calculated using the treasury stock method.

Intangible and Other Assets

Intangible Assets Not Subject to Amortization

A significant portion of the Company's intangible assets are licenses that provide the Company the exclusive right to provide MSS services over the Globalstar System or to utilize designated radio frequency spectrum to provide terrestrial wireless communication services in a particular region of the world. While licenses are issued for only a fixed time, such licenses are subject to renewal by the Federal Communications Commission ("FCC") or equivalent international regulatory authorities. These license renewals are expected to occur routinely and at nominal cost. Moreover, the Company has determined that there are currently no legal, regulatory, contractual, competitive, economic or other factors that limit the useful life of its wireless licenses. As a result, the Company treats the wireless licenses as an indefinite-lived intangible asset. The Company re-evaluates the useful life determination for wireless licenses annually, or more frequently if needed, to determine whether events and circumstances continue to support an indefinite useful life. The Company assesses these intangible assets for impairment annually or more frequently if events or changes in circumstances indicate that it is more likely than not that the asset is impaired. In assessing whether it is more likely than not that such an asset is impaired, the Company assesses relevant events and circumstances that could affect the significant inputs used to determine the fair value of the asset. If the Company determines that an impairment exists, any related loss is estimated based on fair values.

Intangible Assets Subject to Amortization

Our intangible assets that do not have indefinite lives are amortized over their estimated useful lives. For information related to each major class of intangible assets, including accumulated amortization and estimated average useful lives, see Note 5: Intangible and Other Assets. Intangible assets subject to amortization are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. If an indicator is present, the Company would measure recoverability by comparing the carrying amount to the future undiscounted cash flows the asset is expected to generate. If the asset is not recoverable, the undiscounted cash flows do not exceed the carrying amount and the carrying amount would be adjusted down to its fair value. Refer to Note 8: Fair Value Measurements for further discussion on the impairment recorded for intangible assets for the year ended December 31, 2022.

Contract Costs

The Company capitalizes incremental costs to obtain and/or fulfill a contract to the extent it expects to recover them. For subscriber-driven contracts, these capitalized contract acquisition costs primarily include deferred subscriber acquisition costs and are amortized consistently with the pattern of transfer of the good or delivery of the service to which the asset relates. For wholesale capacity services provided to Partner, contract costs include certain expenses incurred by the Company prior to the customer benefiting from the service as well as noncash consideration issued to Partner under the Service Agreements. When a contract terminates prior to the end of its expected life, the remaining contract acquisition cost associated with it becomes impaired and the amount is expensed.

For subscriber driven revenue, total contract acquisition costs were $1.0 million and $1.7 million as of December 31, 2022 and 2021, respectively, and are recorded in other assets on the Company's consolidated balance sheet. These costs are typically amortized to marketing, general and administrative expenses over three years, which considers anticipated contract renewals. For the years ended December 31, 2022, 2021 and 2020, the amount of amortization related to contract acquisition costs was $1.2 million, $2.1 million and $2.1 million, respectively.

For wholesale capacity services, total costs to fulfill a contract were $52.7 million and $2.1 million as of December 31, 2022 and 2021, respectively, and are netted against the associated contract liability, which is recorded in deferred revenue on the Company's consolidated balance sheet. The majority of the increase in costs to fulfill a contract during 2022 was due to noncash consideration issued to Partner in the form of warrants to purchase shares of Globalstar common stock totaling $48.3 million at the issuance date (see Note 15: Stock Compensation for further discussion). These costs are amortized to cost of services or marketing, general and administrative expense or recorded as a reduction to revenue over the period in which the Company commences its performance obligations through the estimated completion of the contract term, consistent with the period in which the customer benefits from the services provided. For the year ended December 31, 2022, the amount of amortization expense related to costs to fulfill a contract was $0.1 million. For the year ended December 31, 2022, the Company reduced revenue by $0.2 million associated with the amortization of the fair value of the noncash consideration issued to Partner. The Company did not amortize any costs to fulfill a contract during 2021 or 2020.

Advertising Expenses

Advertising costs were $2.0 million, $2.3 million and $2.5 million for 2022, 2021, and 2020, respectively. These costs are expensed as incurred as marketing, general and administrative expenses.

Recently Issued Accounting Pronouncements

In September 2022, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update ("ASU") No. 2022-04: *Liabilities — Supplier Finance Programs (Subtopic 405-50): Disclosure of Supplier Finance Program Obligations*. ASU 2022-04 added certain disclosure requirements for buyers in supplier finance programs. The amendments in the update require that buyers disclose qualitative and quantitative information about their supplier finance programs. Interim and annual requirements include disclosure of outstanding amounts under the obligations as of the end of the reporting period, and annual requirements include a rollforward of those obligations for the annual reporting period, as well as a description of payment and other key terms of the programs. This update is effective for annual periods beginning after December 15, 2022, and interim periods within those fiscal years, except for the requirement to disclose rollforward information, which is effective for fiscal years beginning after December 15, 2023. The Company adopted this standard when it became effective on January 1, 2023 and expects this will impact future disclosures.

Recently Adopted Accounting Pronouncements

In August 2020, the FASB issued ASU No. 2020-06: *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity*. Among other things, ASU No. 2020-06 simplifies the guidance in ASC 470 by eliminating two of the three models that require separating embedded conversion features from convertible instruments. This ASU is effective for public entities for annual and interim periods beginning after December 15, 2021. The Company adopted this standard when it became effective on January 1, 2022. For existing debt instruments, this standard will not have a material impact to its consolidated financial statements or related disclosures.

2. REVENUE

Disaggregation of Revenue

The following table discloses revenue disaggregated by type of product and service (amounts in thousands):

	Year Ended December 31,		
	2022	2021	2020
Service revenue:			
Subscriber services			
Duplex	$ 29,222	$ 31,197	$ 33,878
SPOT	45,670	46,040	46,417
Commercial IoT	19,516	17,951	17,174
Wholesale capacity services	34,913	8,945	10,196
Engineering and other services	2,747	2,331	5,526
Total service revenue	132,068	106,464	113,191
Subscriber equipment sales:			
Duplex	$ 319	$ 1,011	$ 1,883
SPOT	5,888	9,427	8,176
Commercial IoT	10,132	7,169	5,140
Other	97	226	97
Total subscriber equipment sales	16,436	17,833	15,296
Total revenue	$ 148,504	$ 124,297	$ 128,487

As consideration for the services provided by Globalstar under the Service Agreements, Partner makes payments to Globalstar, including a recurring service fee, payments relating to certain service-related operating expenses and capital expenditures, and potential bonus payments subject to satisfaction of certain licensing, service and other related criteria. In connection with the amendment of the Service Agreements in February 2023, Partner agreed to pay the Company consideration related to performance obligations completed in prior periods. The Company expects to recognize revenue in 2023 when payment is realized.

The Company attributes equipment revenue to various countries based on the location where equipment is sold. Service revenue is generally attributed to the various countries based on the Globalstar entity that holds the customer contract. The following table discloses revenue disaggregated by geographical market (amounts in thousands):

	Year Ended December 31,		
	2022	2021	2020
Service revenue:			
United States	$ 99,735	$ 75,053	$ 82,765
Canada	17,421	17,913	18,217
Europe	6,428	7,300	7,040
Central and South America	7,961	5,447	4,242
Others	523	751	927
Total service revenue	132,068	106,464	113,191
Subscriber equipment sales:			
United States	$ 7,981	$ 10,238	$ 8,226
Canada	4,740	3,029	3,741
Europe	1,870	2,018	1,639
Central and South America	1,793	2,487	1,674
Others	52	61	16
Total subscriber equipment sales	16,436	17,833	15,296
Total revenue	$ 148,504	$ 124,297	$ 128,487

Accounts Receivable

Receivables are included in "Accounts receivable, net of allowance for credit losses" on the Company's consolidated balance sheets except for the long-term portion of the wholesale capacity accounts receivable, which is included in "Prepaid satellite construction costs and related customer receivable". The Company's receivable balances by type and classification are presented in the table below net of allowance for credit losses and may include amounts related to earned but unbilled receivables (amounts in thousands):

	As of December 31,	
	2022	2021
Accounts receivable, net of allowance for credit losses		
Subscriber accounts receivable	$ 14,850	$ 12,825
Wholesale capacity accounts receivable	7,234	1,861
Agency agreement accounts receivable	4,245	6,496
Total accounts receivable, net of allowance for credit losses	$ 26,329	$ 21,182
Long-term wholesale capacity accounts receivable	111,026	—
Total accounts receivable (short-term and long-term), net of allowance for credit losses	$ 137,355	$ 21,182

In February 2022, the Company entered into an agreement for the purchase of new satellites that will replenish the Company's existing satellite constellation. Under the Service Agreements, subject to certain terms and conditions, Partner has agreed to make service payments equal to 95% of the approved capital expenditures under the satellite procurement agreement (to be paid on a straight-line basis over the useful life of the satellites) and certain other costs incurred for the new satellites, as adjusted based on certain provisions, beginning with the Phase 2 Service Period. As the Company incurs construction in progress associated with the MDA contract, it earns the right to receive certain payments from Partner associated with this phase of the Service Agreements. In accordance with the expected timing of payment from Partner, $7.2 million is recorded in "Wholesale capacity accounts receivable" and $111.0 million is recorded in "Long-term wholesale capacity accounts receivable" in the table above.

Contract Liabilities

Contract liabilities, which are included in deferred revenue on the Company's consolidated balance sheet, represent the Company's obligation to transfer service or equipment to a customer from whom it has previously received consideration. Contract liabilities reflect balances from its customers, including MSS subscribers and the Partner under the Service Agreements. The Company's contract liabilities by type and classification are presented in the table below (amounts in thousands).

	As of December 31,	
	2022	2021
Short-term contract liabilities		
Subscriber contract liabilities	$ 21,987	$ 24,940
Wholesale capacity contract liabilities	52,652	987
Total short-term contract liabilities	$ 74,639	$ 25,927
Long-term contract liabilities		
Subscriber contract liabilities	$ 1,704	$ 1,783
Wholesale capacity contract liabilities, net of contract asset	156,099	110,271
Total long-term contract liabilities	$ 157,803	$ 112,054
Total contract liabilities	$ 232,442	$ 137,981

For subscriber contract liabilities, the amount of revenue recognized during the years ended December 31, 2022 and 2021 from performance obligations included in the contract liability balance at the beginning of these periods was $23.4 million and $24.1 million, respectively. For wholesale capacity contract liabilities, the amount of revenue recognized during the years ended December 31, 2022 and 2021 from performance obligations included in the contract liability balance at the beginning of these periods was $0.8 million and zero, respectively.

The duration of the Company's contracts with subscribers is generally one year or less. As of December 31, 2022, the Company expects to recognize $22.0 million, or approximately 93%, of its remaining performance obligations during the next twelve months. The Service Agreements have no expiration date; therefore, the related contract liabilities may be recognized into revenue over various periods driven by the expected related service or recoupment periods. As of December 31, 2022, the Company expects to recognize $52.7 million, or approximately 25%, of its remaining performance obligations during the next twelve months.

The components of wholesale capacity contract liabilities are presented in the table below (amounts in thousands).

	As of December 31,	
	2022	2021
Wholesale capacity contract liabilities, net:		
Advanced payments for services expected to be performed with the second-generation satellite constellation during Phase 1 (1)	$ 99,671	$ 96,362
Advanced payments for services expected to be performed with the recently launched ground spare satellite during Phases 1 and 2	25,438	16,981
Advanced payments (both received and contractually owed) for services expected to be performed with the next-generation satellite constellation during Phase 2	117,466	—
Advanced payments for the Phase 1 service fee and service-related operating expenses and capital expenditures	18,872	—
Contract asset (2)	(52,696)	(2,085)
Wholesale capacity contract liabilities, net	$ 208,751	$ 111,258

(1) In accordance with applicable accounting guidance, the Company records imputed interest associated with the significant financing component, totaling $5.3 million and $1.9 million as of December 31, 2022 and 2021, respectively, which is included in deferred revenue and represents the remaining amount to be recognized over the Company's performance obligations.

(2) In November 2022, the Company issued Warrants (as defined) to Partner (see Note 15: Stock Compensation for further discussion). The initial fair value of the Warrants at the time of issuance was $48.3 million and recorded in equity with an offset to a contract asset on the Company's consolidated balance sheets. The fair value of the Warrants is recorded as a reduction to revenue over the period in which the Company commences its performance obligations

through the estimated completion of the contract term, consistent with the period in which the customer benefits from the services provided.

3. LEASES

The following tables disclose the components of the Company’s finance and operating leases (amounts in thousands):

	As of December 31,	
	2022	2021
Operating leases:		
Right-of-use asset, net	$ 30,859	$ 32,041
Short-term lease liability (recorded in accrued expenses)	2,747	2,501
Long-term lease liability	27,635	29,237
Total operating lease liabilities	$ 30,382	$ 31,738
Finance leases:		
Right-of-use asset, net (recorded in intangible and other current assets, net)	$ 104	$ 8
Short-term lease liability (recorded in accrued expenses)	16	6
Long-term lease liability (recorded in non-current liabilities)	71	3
Total finance lease liabilities	$ 87	$ 9

In connection with the Company's gateway expansion project related to the Service Agreements, the Company commenced one operating lease during 2022 for a new gateway site totaling $2.1 million.

Lease Cost

The components of lease cost are reflected in the table below (amounts in thousands):

	Year Ended December 31,		
	2022	2021	2020
Operating lease cost:			
Amortization of right-of-use assets	$ 2,605	$ 2,601	$ 1,880
Interest on lease liabilities	2,524	1,948	1,320
Capitalized lease cost	(823)	(615)	—
Finance lease cost:			
Amortization of right-of-use assets	12	11	76
Interest on lease liabilities	3	1	4
Short-term lease cost	498	213	100
Total lease cost	$ 4,819	$ 4,159	$ 3,380

In accordance with the Service Agreements, the Company has capitalized certain costs to fulfill this contract, including lease expense, as shown in the table above. These capitalized lease costs will be amortized over the expected term of the related performance obligation.

Weighted-Average Remaining Lease Term and Discount Rate

The following table discloses the weighted-average remaining lease term and discount rate for finance and operating leases:

	As of December 31,	
	2022	2021
Weighted-average lease term		
Finance leases	4.6 years	1.6 years
Operating Leases	10.1 years	10.6 years
Weighted-average discount rate		
Finance leases	10.2 %	7.0 %
Operating leases	8.5 %	8.4 %

Supplemental Cash Flow Information

The below table discloses supplemental cash flow information for finance and operating leases (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash flows from operating leases	$ 5,299	$ 5,445	$ 3,055
Operating cash flows from finance leases	3	1	4
Financing cash flows from finance leases	30	10	68

Maturity Analysis

The following table reflects undiscounted cash flows on an annual basis for the Company's lease liabilities as of December 31, 2022 (amounts in thousands):

	Operating Leases	Finance Leases
2023	$ 4,913	$ 25
2024	4,786	23
2025	4,814	23
2026	4,862	23
2027	4,740	15
Thereafter	17,823	—
Total lease payments	$ 41,938	$ 109
Imputed interest	(11,556)	(22)
Discounted lease liability	$ 30,382	$ 87

As of December 31, 2022, the Company had executed an additional operating lease for a new gateway location, which has not yet commenced since the lessor is continuing to ready the site for use. Accordingly, this lease is not reflected on the balance sheet as of December 31, 2022 or in the maturity table above. The Company is in the process of evaluating this lease obligation and expects it to be approximately $2.3 million.

4. PROPERTY AND EQUIPMENT

Property and equipment consists of the following (in thousands):

	As of December 31,	
	2022	2021
Globalstar System:		
Space component		
First and second-generation satellites in service	$ 1,246,343	$ 1,195,509
Second-generation satellite, on-ground spare	—	32,442
Ground component	92,125	282,268
Construction in progress:		
Space component	110,068	16,394
Ground component	5,316	33,998
Other	9,167	4,123
Total Globalstar System	1,463,019	1,564,734
Internally developed and purchased software	22,509	20,823
Equipment	8,042	8,590
Land and buildings	1,681	1,149
Leasehold improvements	2,083	2,088
Total property and equipment	1,497,334	1,597,384
Accumulated depreciation	(936,963)	(925,228)
Total property and equipment, net	$ 560,371	$ 672,156

Amounts included in "second-generation satellite, on-ground spare" in the table above consist of costs related to one of the Company's second-generation satellites that was stored as an on-ground spare satellite until its launch in June 2022. The costs to prepare this satellite for launch were included in "construction in progress - space component" in the table above prior to its launch. During 2022, $66.7 million in costs associated with the construction and launch of this spare satellite (including capitalized interest) were placed into service. Since this satellite is expected to remain as an in-orbit spare and will only be raised to its operational orbit at a future date if needed, it was placed into service following its successful launch.

In February 2022, the Company entered into an agreement with an initial contract price of $327 million for the purchase of new satellites that will replenish the Company's existing satellite constellation. As of December 31, 2022, the Company recorded $11.5 million as prepaid satellite construction costs associated with the upfront milestone payment due upon signing and $98.5 million in construction in progress on its consolidated balance sheet.

The ground component of construction in progress includes costs incurred for assets to upgrade the Company's ground infrastructure, including costs associated with the procurement of new gateway antennas. During 2022, the Company placed $28.9 million of costs into service associated with these antennas (including capitalized interest), which are included in ground component in the table above. These capital expenditures relate primarily to gateway upgrade work in connection with the Service Agreements.

As discussed in Note 1: Summary of Significant Accounting Policies and Note 8: Fair Value Measurements, the Company evaluated the recoverability of its second-generation Duplex assets in September 2022. This evaluation resulted in the removal of the second-generation Duplex assets from the Company's long-lived asset grouping. The reduction in value of long-lived assets recorded during the third quarter of 2022 totaled $161.2 million. The table below reflects the reduction in value of long-lived assets by each component of Property and equipment, net, and Intangible and other assets, net, previously recorded on the Company's consolidated balance sheets (amounts in thousands, reflected net of accumulated depreciation and amortization, as applicable, prior to their write downs).

	Three months ended September 30, 2022
Property and equipment, net	
Ground component	$ 154,144
Construction in progress: ground component	5,545
Equipment	202
Total property and equipment, net	$ 159,891
Intangible and other assets, net	$ 1,271
Total reduction in value of long-lived assets	$ 161,162

Capitalized Interest and Depreciation Expense

The following table summarizes capitalized interest for the periods indicated below (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Interest cost eligible to be capitalized	$ 45,609	$ 47,580	$ 50,721
Interest cost recorded in interest income (expense), net	(29,836)	(43,325)	(48,064)
Net interest capitalized	$ 15,773	$ 4,255	$ 2,657

The following table summarizes depreciation expense for the periods indicated below (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Depreciation Expense	$ 85,475	$ 84,225	$ 84,853

The following table summarizes amortization expense for the periods indicated below (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Amortization Expense	$ 8,409	$ 12,012	$ 11,962

Geographic Location of Property and Equipment

Long-lived assets consist primarily of property and equipment and are attributed to various countries based on the physical location of the asset, except for the Company’s satellites which are included in the long-lived assets of the United States. The Company’s information by geographic area is as follows (in thousands):

	Year Ended December 31,	
	2022	2021
Property and equipment:		
United States	$ 519,752	$ 621,474
Central and South America	15,224	22,981
Canada	2,582	13,921
Africa	11,507	5,471
Europe	2,393	5,136
Asia	4,410	2,752
Australia	4,503	421
Total property and equipment	$ 560,371	$ 672,156

5. INTANGIBLE AND OTHER ASSETS

Intangible Assets

The Company has intangible assets not subject to amortization, which include certain costs to obtain or defend regulatory authorizations and a portion of capitalized interest associated with these assets. These costs primarily include efforts related to the enhancement of the Company's licensed MSS spectrum to provide terrestrial wireless services as well as costs with international regulatory agencies to obtain similar terrestrial authorizations outside of the United States. This category includes work in progress assets as well as indefinite lived assets already placed into service. The Company also has intangible assets subject to amortization, which primarily include developed technology and definite lived MSS licenses.

The gross carrying amount and accumulated amortization of the Company's intangible assets consist of the following (in thousands):

	December 31, 2022			December 31, 2021		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Intangible Assets Not Subject to Amortization	$ 26,180	$ —	$ 26,180	$ 24,906	$ —	$ 24,906
Intangible Assets Subject to Amortization:						
Developed technology	$ 9,113	$ (7,292)	$ 1,821	$ 11,865	$ (7,949)	$ 3,916
Regulatory authorizations	3,722	(1,316)	2,406	3,104	(940)	2,164
	$ 12,835	$ (8,608)	$ 4,227	$ 14,969	$ (8,889)	$ 6,080
Total	$ 39,015	$ (8,608)	$ 30,407	$ 39,875	$ (8,889)	$ 30,986

For the twelve months ended December 31, 2022, the Company recorded amortization expense on these intangible assets of $1.2 million. Amortization expense is recorded in operating expenses in the Company’s consolidated statements of operations. For the year ended December 31, 2022, the Company recorded a reduction in value of assets associated with intangible assets totaling $0.7 million on its consolidated statements of operations (refer to Note 8: Fair Value Measurements for further discussion).

Excluding the effects of any acquisitions, dispositions or write-downs subsequent to December 31, 2022, total estimated annual amortization of intangible assets is as follows (in thousands):

2023	$ 841
2024	640
2025	493
2026	444
2027	379
Thereafter	1,430
Total	$ 4,227

Other Assets

Other assets consist of the following (in thousands):

	December 31, 2022	December 31, 2021
Costs to obtain and fulfill a contract (Note 1)	$ 1,770	$ 1,725
Long-term prepaid licenses and royalties (Note 8)	—	4,380
International tax receivables (Note 13)	3,552	577
Compound embedded derivative with the 2019 Facility Agreement (Note 7 and Note 8)	—	484
ERP software costs	1,131	919
Other long-term assets	1,565	1,965
Total other assets	$ 8,018	$ 10,050

6. LONG-TERM DEBT AND OTHER FINANCING ARRANGEMENTS

Long-term debt consists of the following (in thousands):

	December 31, 2022			December 31, 2021		
	Principal Amount	Unamortized Discount and Deferred Financing Costs	Carrying Value	Principal Amount	Unamortized Discount and Deferred Financing Costs	Carrying Value
2019 Facility Agreement	$ 143,213	$ 11,098	$ 132,115	$ 263,812	$ 27,287	$ 236,525
Vendor financing	59,822		59,822	—	—	—
8.00% Convertible Senior Notes Issued in 2013	—		—	1,407	—	1,407
Total debt and vendor financing	203,035	11,098	191,937	265,219	27,287	237,932
Less: current portion	59,822	—	59,822	—	—	—
Long-term debt and vendor financing	$ 143,213	$ 11,098	$ 132,115	$ 265,219	$ 27,287	$ 237,932

The principal amounts shown above include payment of in-kind interest, as applicable. The carrying value is net of deferred financing costs and any discounts to the loan amounts at issuance, including accretion. All amounts outstanding associated with the Company's vendor financing arrangement are due within the next twelve months and, therefore, are reflected as a current liability on the Company's consolidated balance sheets.

2019 Facility Agreement

In November 2019, the Company entered into a $199.0 million facility agreement with Thermo, an affiliate of EchoStar Corporation and certain other unaffiliated lenders (the "2019 Facility Agreement"). The 2019 Facility Agreement is scheduled to mature in November 2025. The remaining loans under the 2019 Facility Agreement bear interest at a rate of 14.0% per annum to be paid in kind (or in cash, at the option of the Company).

The Service Agreements require the Company to refinance all loans outstanding under the 2019 Facility Agreement. A portion was refinanced in November 2022 and the remaining portion is to be refinanced by March 13, 2023 (as amended). On February 13, 2023, the Company provided notice, as required under the 2019 Facility Agreement, to the remaining lender of its intent to voluntarily prepay all remaining amounts due under the 2019 Facility Agreement.

In connection with our Partner's launch of Services on November 15, 2022, the Company was obligated to complete the Thermo Debt Conversion (as described in our Current Report on Form 8-K filed September 7, 2022). To satisfy this obligation, the Company entered into an Exchange Agreement dated as of November 15, 2022 (the “Exchange Agreement”) with affiliates of Thermo and certain other lenders (collectively, the “Exchanging Lenders”) providing for the exchange of $149.4 million outstanding principal amount of, and accrued and unpaid interest on, the Exchanging Lenders’ loans under the 2019 Facility Agreement for 149,425 shares of 7.0% Perpetual Preferred Stock, Series A, liquidation preference $1,000 per share (the “Series A Preferred Stock”).

The Company recorded the debt extinguishment in the fourth quarter of 2022 representing the difference between the net carrying amount prior to extinguishment (including unamortized deferred financing costs, debt discounts and derivatives) and the reacquisition price of the debt. In accordance with accounting guidance for debt extinguishment with related parties, the Company recorded the portion exchanged by Thermo of $30.8 million as a contribution to capital through equity on its consolidated balance sheets. For the portion exchanged by other lenders, the Company recorded a gain on extinguishment of debt totaling $2.8 million on its consolidated statements of operations.

The Company's obligations under the 2019 Facility Agreement are guaranteed on a senior secured basis by all of its domestic subsidiaries' assets and are secured by a first priority lien on substantially all of the assets of the Company and its domestic subsidiaries (other than their FCC licenses), including patents and trademarks, 100% of the equity of the Company's domestic subsidiaries and 65% of the equity of certain foreign subsidiaries.

The cash proceeds from this loan were net of a 3%, or $6.0 million, original issue discount (the "OID"). A portion of this OID was recorded as a debt discount of $4.0 million. This debt discount was netted against the principal amount of the loan and is being accreted using an effective interest method to interest expense over the term of the loan.

As additional consideration for the loan, the Company issued the lenders warrants to purchase 124.5 million shares of voting common stock at an exercise price of $0.38 per share. The Company determined that the warrants were equity instruments and recorded them as a part of stockholders’ equity. A portion of the fair value of the warrants was recorded as a debt discount of $15.8 million. This debt discount was netted against the principal amount of the loan and is being accreted using an effective interest method to interest expense over the term of the loan. All of the warrants issued to the lenders were exercised before their expiration date on March 31, 2021.

The 2019 Facility Agreement contains customary events of default and requires that the Company satisfy various financial and non-financial covenants, including the following items that were in place as of December 31, 2022:

- The Company's capital expenditures do not exceed $25.0 million for 2021 or 2022, excluding capital expenditures for the replacement satellites and network upgrades associated with the Service Agreements;
- The Company's expenditures in connection with its spectrum rights do not exceed $20.0 million;
- The Company maintains at all times a minimum liquidity balance of $3.6 million;
- The Company achieves minimum adjusted consolidated EBITDA (as defined in the 2019 Facility Agreement) of $21.1 million and $27.1 million for the six-month periods ended June 30, 2022 and December 31, 2022, respectively;
- The Company maintains a minimum debt service coverage ratio of 0.90:1;
- The Company maintains a maximum net debt to adjusted consolidated EBITDA ratio of 2.75:1; and
- The Company maintains a minimum interest coverage ratio of 4.73:1 for the two semi-annual measurement periods leading up to December 31, 2022.

The Company received waivers from its senior lenders to permit certain transactions during 2022. including capital expenditures associated with our obligations under the Service Agreements, vendor financing associated with the MDA agreement, termination of the Globalstar pension plan, and redemption of the 2013 8.00% Notes.

As of December 31, 2022, the Company was in compliance with the covenants of the 2019 Facility Agreement.

The 2019 Facility Agreement requires mandatory prepayments of principal with any Excess Cash Flow (as defined and calculated in the 2019 Facility Agreement) on a semi-annual basis. The Company generated excess cash flow for the six-month measurement period ended June 30, 2022 and was required to pay $6.3 million to its lenders in August 2022. This payment reduced future principal payment obligations. The Company generated excess cash flow for the six-month measurement period ended December 31, 2022 and will be required to pay approximately $2.0 million if the debt remains outstanding on March 16, 2023.

The Company evaluated the various embedded derivatives within the 2019 Facility Agreement related to certain contingently exercisable put options. Due to the substantial discount upon issuance, as calculated under applicable accounting guidance, these prepayment features were required to be bifurcated and separately valued. The Company initially recorded the compound embedded derivative liability as a non-current liability on its consolidated balance sheets with a corresponding debt discount, which is netted against the face value of the 2019 Facility Agreement. The Company is accreting the debt discount associated with the compound embedded derivative liability to interest expense through the maturity date using an effective interest rate method. Refer to Note 7: Derivatives and Note 8: Fair Value Measurements for further discussion on the compound embedded derivative bifurcated from the 2019 Facility Agreement.

Thermo's participation in the 2019 Facility Agreement was reviewed and approved by the Company's Strategic Review Committee, which is a committee of disinterested and independent directors who are represented by independent legal counsel. See Note 11: Related Party Transactions for further information on the role and responsibility of the Strategic Review Committee.

Vendor Financing

In February 2022, the Company entered into a satellite procurement agreement with MDA (see Note 9: Commitments and Contingencies for further discussion). This agreement (as amended in October 2022 and January 2023) provides for deferrals of milestone payments through March 15, 2023. The Company received a waiver from its senior lenders to permit this vendor financing as subordinated indebtedness, The Company has made $34 million in payments to MDA under this agreement, including $14 million during the fourth quarter 2022 and $20 million in January 2023. Interest accrues on the amount outstanding at an annual rate of 7%, which increased to 10.5% on balances between December 2022 and March 2023. As of December 31, 2022, the Company had recorded $59.8 million in short-term vendor financing and total accrued interest of $1.3 million on its consolidated balance sheet associated with this agreement. The Company has also accrued $36.1 million on its consolidated balance sheet associated with work performed but not yet billed. As discussed in the Recent Developments section of Note 1: Summary of Significant Accounting Policies, in February 2023, Globalstar and its Partner under the Service Agreements agreed to amend the Service Agreements to provide for, among other things, Partner’s prepayment of $252 million to pay amounts currently due and payable, as well as other amounts as they become due and payable, under the satellite procurement agreement.

Series A Preferred Stock

As discussed above, on November 15, 2022, the Company issued 149,425 shares of Series A Preferred Stock in exchange for $149.4 million outstanding principal amount of its 2019 Facility Agreement, and recorded the fair value of the shares totaling $105.3 million on the Company's consolidated balance sheet. The shares of Series A Preferred Stock do not possess voting rights, other than certain matters specifically affecting the rights and obligations of the Series A Preferred.

Holders of Series A Preferred Stock will be entitled to receive, when, as and if declared by our Board of Directors or a committee thereof, cumulative cash dividends based on the liquidation preference of the Series A Preferred Stock, at a fixed rate equal to 7.00% per annum, payable quarterly in arrears on January 1, April 1, July 1 and October 1 of each year, beginning on January 1, 2023. In January 2023, the Company's Board of Directors approved the payment of dividends totaling $1.3 million for the period November 15, 2022 through December 31, 2022, and these dividends have been paid.

Series A Preferred Stock may be redeemed by the Company, in whole or in part, at any time. The holders of the Series A Preferred Stock do not have any rights to convert or require the Company to redeem such stock. The holders of the Series A Preferred stock have customary liquidation preferences.

Refer to Note 8: Fair Value Measurements for further discussion on the valuation of the preferred stock.

8.00% Convertible Senior Notes Issued in 2013

In May 2013, the Company issued $54.6 million aggregate principal amount of its 2013 8.00% Notes. During 2022, the holders converted the remaining principal amount outstanding of $1.4 million into 2.3 million shares of Globalstar common stock at a conversion price of $0.69 per share.

As a result of the conversions during 2022, the Company recorded gains and losses on extinguishment of debt resulting from the difference between the fair value of shares of Globalstar common stock issued to the holders and the principal amount of the notes that converted as well as the write-offs of the embedded derivative associated with the 2013 8.00% Notes. The net impact to the Company's consolidated statements of operations in 2022 was a gain of less than $0.1 million.

Refer to Note 7: Derivatives and Note 8: Fair Value Measurements for further discussion on the compound embedded derivative bifurcated from the 2013 8.00% Notes.

2009 Facility Agreement

In 2009, the Company entered into a facility agreement with a syndicate of bank lenders (the "2009 Facility Agreement"). In 2021, the Company fully repaid the 2009 Facility Agreement prior to its scheduled maturity in December 2022. In connection with the debt prepayments and final payoff made during 2021, the Company recorded net losses on extinguishment of debt totaling $1.9 million on its consolidated statements of operations representing the difference between the net carrying amount prior to extinguishment (including unamortized deferred financing costs) and the reacquisition price of the debt (primarily including of the partial refund of premiums).

Paycheck Protection Program Loan

In April 2020, the Company sought relief under the CARES Act and received a $5.0 million loan under the Paycheck Protection Program ("PPP"), (the "PPP Loan"). In June 2021, the Small Business Administration approved the Company's request for forgiveness of all amounts outstanding under the PPP Loan, including accrued interest. The Company evaluated the applicable accounting guidance relative to the PPP Loan and accounted for the proceeds of the PPP Loan as debt under ASC 470. As the entire principal balance, including accrued interest, was forgiven in June 2021, the Company recorded a gain on extinguishment of debt totaling $5.0 million on its consolidated statements of operations.

Debt maturities

Annual debt maturities for each of the five years following December 31, 2022 and thereafter are as follows (in thousands):

2023	$	—
2024		—
2025		143,213
2026		—
2027		—
Thereafter		—
Total	$	143,213

Amounts in the above table are calculated based on amounts outstanding at December 31, 2022, and therefore exclude paid-in-kind interest payments that will be made in future periods. Additionally, amounts in the table above exclude the Company's vendor financing arrangement, of which $59.8 million was outstanding as of December 31, 2022 and future recoupment amounts due under the Service Agreements.

7. DERIVATIVES

The Company has identified various embedded derivatives resulting from certain features in the Company's existing borrowing arrangements, requiring recognition on its consolidated balance sheets. None of these derivative instruments are designated as a hedge. The following table discloses the fair values of the derivative instruments on the Company's consolidated balance sheets (in thousands):

	December 31,	
	2022	2021
Derivative (liabilities) assets:		
Compound embedded derivative with the 2019 Facility Agreement	$ (122)	$ 484
Compound embedded derivative with the 2013 8.00% Notes	$ —	$ (1,364)

As of December 31, 2022 and December 31, 2021, the derivative (liability) asset recorded for the compound embedded derivative with the 2019 Facility Agreement was reflected in Other non-current liabilities and Intangible and other assets, net, respectively, on the Company's consolidated balance sheets. During the first quarter of 2022, the remaining principal amount of the 2013 8.00% Notes was converted into shares of Globalstar common stock; accordingly, the associated derivative is no longer outstanding. Prior to this conversion, the derivative liability associated with the 2013 8.00% Notes was included in Other non-current liabilities on the Company's consolidated balance sheets.

The following table discloses the changes in value recorded as derivative (loss) gain in the Company's consolidated statement of operations (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Compound embedded derivative with the 2013 8.00% Notes	$ 216	$ (1,241)	$ 399
Compound embedded derivative with the Loan Agreement with Thermo	—	—	212
Compound embedded derivative with the 2019 Facility Agreement	(1,021)	198	2,286
Total derivative (loss) gain	$ (805)	$ (1,043)	$ 2,897

The fair value of each embedded derivative is marked-to-market at the end of each reporting period, or more frequently as deemed necessary, with any changes in value reported in the consolidated statements of operations and consolidated statements of cash flows as a non-cash operating activity. The Company classifies its derivatives consistent with the classification of the underlying debt on the Company's consolidated balance sheet. See Note 8: Fair Value Measurements for further discussion. Each liability or asset and the features embedded in the debt instrument, which required the Company to account for the instrument as a derivative, are described below.

Compound Embedded Derivative with the 2019 Facility Agreement

As a result of certain contingently exercisable put features within the 2019 Facility Agreement, the Company initially recorded a compound embedded derivative liability on its consolidated balance sheet with a corresponding debt discount that is netted against the face value of the 2019 Facility Agreement. The Company determined the fair value of the compound embedded derivative liability using a probability weighted discounted cash flow model. In November 2022, the Company exchanged a portion of the 2019 Facility Agreement into Series A Preferred Stock. As a result of this exchange, the Company wrote off a portion of the embedded derivative associated with the 2019 Facility Agreement during the fourth quarter of 2022. See Note 6: Long-Term Debt and Other Financing Arrangements for further discussion.

Compound Embedded Derivative with 2013 8.00% Notes

As a result of the conversion option and the contingent put feature within the 2013 8.00% Notes, the Company recorded a compound embedded derivative liability on its consolidated balance sheets with a corresponding debt discount that was netted against the face value of the 2013 8.00% Notes. The Company determined the fair value of the compound embedded derivative liability using a Monte Carlo simulation model. The Company classified this derivative liability consistent with the classification of the 2013 8.00% Notes on the Company's consolidated balance sheet. During the first quarter of 2022, the compound embedded derivative with the 2013 8.00% Notes was extinguished.

Compound Embedded Derivative with the Loan Agreement with Thermo

As a result of the conversion option and the contingent put feature within the Loan Agreement with Thermo as amended and restated in 2013, the Company recorded a compound embedded derivative liability on its consolidated balance sheets with a corresponding debt discount that was netted against the face value of the Loan Agreement. The Company determined the fair value of the compound embedded derivative liability using a Monte Carlo simulation model. During the first quarter of 2020, the compound embedded derivative with the Loan Agreement with Thermo was extinguished.

8. FAIR VALUE MEASUREMENTS

The Company follows the authoritative guidance for fair value measurements relating to financial and non-financial assets and liabilities, including presentation of required disclosures herein. This guidance establishes a fair value framework requiring the categorization of assets and liabilities into three levels based upon the assumptions (inputs) used to price the assets and liabilities. Level 1 provides the most reliable measure of fair value, whereas Level 3 generally requires significant management judgment. The three levels are defined as follows:

Level 1: Unadjusted quoted prices in active markets that are accessible at the measurement date for identical assets or liabilities.

Level 2: Quoted prices in markets that are not active or inputs which are observable, either directly or indirectly, for substantially the full term of the asset or liability.

Level 3: Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable (i.e., supported by little or no market activity).

Recurring Fair Value Measurements

The following tables provide a summary of the assets and liabilities measured at fair value on a recurring basis (in thousands):

	Fair Value Measurements at December 31, 2022:			
	(Level 1)	(Level 2)	(Level 3)	Total Balance
Liabilities:				
Compound embedded derivative with the 2019 Facility Agreement	$ —	$ —	$ (122)	$ (122)
Total liabilities measured at fair value	$ —	$ —	$ (122)	$ (122)

	Fair Value Measurements at December 31, 2021:			
	(Level 1)	(Level 2)	(Level 3)	Total Balance
Assets:				
Compound embedded derivative with the 2019 Facility Agreement	$ —	$ —	$ 484	$ 484
Total assets measured at fair value	$ —	$ —	$ 484	$ 484
Liabilities:				
Compound embedded derivative with the 2013 8.00% Notes	$ —	$ —	$ (1,364)	$ (1,364)
Total liabilities measured at fair value	$ —	$ —	$ (1,364)	$ (1,364)

All of the Company's derivative assets and liabilities are classified as Level 3. The Company marks-to-market these assets and liabilities at each reporting date, or more frequently as deemed necessary, with the changes in fair value recognized in the Company’s consolidated statements of operations. See Note 7: Derivatives for further discussion.

2013 8.00% Notes

The significant quantitative Level 3 inputs utilized in the valuation models are shown in the tables below:

	December 31, 2021:				
	Stock Price Volatility	Risk-Free Interest Rate	Note Conversion Price	Discount Rate	Market Price of Common Stock
Compound embedded derivative with the 2013 8.00% Notes	120 - 139%	0.5%	$0.69	18%	$1.16

Fluctuation in the Company’s stock price and stock price volatility were significant drivers of the change in the compound embedded derivative with the 2013 8.00% Notes. Increases in these inputs resulted in a higher fair value measurement.

2019 Facility Agreement

The compound embedded derivative with the 2019 Facility Agreement is valued using a probability weighted discounted cash flow model. The most significant observable input used in the fair value measurement is the discount yield, which was 21% and 13% at December 31, 2022 and 2021, respectively. When the discount yield utilized in the valuation is higher than the blended interest rate of the underlying debt, the features embedded in the underlying debt result in a liability for the Company. Conversely, when the discount yield is lower than the blended interest rate of the underlying debt, the features embedded in the underlying debt result in an asset for the Company. The unobservable inputs used in the fair value measurement include the probability of change of control and the estimated timing and amounts of cash flows associated with certain mandatory prepayments within the debt agreement. As the expected timing and amount of prepayments decrease, the fair value of the embedded derivative also decrease. During 2022, the Company's expected probability of refinancing the 2019 Facility Agreement increased and therefore the fair value of the embedded derivative reduced. See Note 6: Long-Term Debt and Other Financing Arrangements for further discussion.

Rollforward of Recurring Level 3 Assets and Liabilities

The following table presents a rollforward for all assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) (in thousands):

	Year Ended December 31,	
	2022	2021
Balances at beginning of period	$ (880)	$ 163
Derivative adjustment related to debt conversions and extinguishments	1,563	—
Unrealized loss, included in derivative (loss) gain	(805)	(1,043)
Balances at end of period	$ (122)	$ (880)

Fair Value of Debt Instruments and Vendor Financing

The Company believes it is not practicable to determine the fair value of the 2019 Facility Agreement without incurring significant additional costs. Unlike typical long-term debt, certain terms for this instrument are not readily available and generally involve a variety of factors, including due diligence by the debt holders. The Company's vendor financing arrangement is recorded at net carrying value, which approximates fair value. As previously disclosed, the remaining principal amount of the 2013 8.00% Notes was converted into shares of Globalstar common stock during 2022; accordingly, there is no value in the table below as of December 31, 2022. The following table sets forth the carrying value and estimated fair value of the Company's Level 3 financial instruments (in thousands):

	December 31, 2022		December 31, 2021	
	Carrying Value	Estimated Fair Value	Carrying Value	Estimated Fair Value
2013 8.00% Notes	$ —	$ —	$ 1,407	$ 1,265

Nonrecurring Fair Value Measurements

The Company follows the authoritative guidance regarding non-financial assets and liabilities that are remeasured at fair value on a nonrecurring basis.

Derivative Liabilities

During 2022, the remaining principal balance of the 2013 8.00% Notes was converted into shares of Globalstar common stock, eliminating the principal balance outstanding. As a result of the conversions, the Company wrote off the proportionate fair value of the compound embedded derivative liability within the 2013 8.00% Notes based on the value of the derivative on each conversion date. As of each conversion date, the fair value of the compound embedded derivative liability within the 2013 8.00% Notes was $0.8 million. The significant quantitative Level 3 inputs utilized in the valuation models as of the conversion date are shown in the table below:

	February 17, 2022			
	Risk-Free Interest Rate	Note Conversion Price	Discount Rate	Market Price of Common Stock
Compound embedded derivative with the 2013 8.00% Notes	0.06 %	$0.69	18 %	$1.00

	March 9, 2022			
	Risk-Free Interest Rate	Note Conversion Price	Discount Rate	Market Price of Common Stock
Compound embedded derivative with the 2013 8.00% Notes	0.18 %	$0.69	19 %	$1.21

Prepaid and Other Current Assets, Intangible and Other Assets and Long-Lived Assets

Prepaid and other current assets, intangible and other assets and long-lived assets are reviewed for impairment whenever events or circumstances indicate that the carrying amount of such assets may not be recoverable. During 2022, the Company wrote down the value of certain assets as reflected in the table below (in thousands).

Prepaid and other current assets	
Prepaid licenses and royalties (1)	$ 183
Intangible and other assets, net	
Prepaid licenses and royalties (1)	4,514
Internally developed technology and software (2)	1,271
Spectrum intangible assets (3)	667
Property and equipment, net (2)	159,891
Grand Total	$ 166,526

(1) While developing its second-generation Duplex technology that supported the Sat-Fi2® device, the Company signed various licensing and royalty agreements necessary for the manufacture and distribution of such products and services. Prepayments associated with these agreements were classified as either current or non-current based on the estimated portion of expense to be recognized over the next twelve months. As of September 7, 2022, approximately $0.2 million and $4.5 million, respectively, was recorded in Prepaid and other current assets and Intangible and other assets, net, on the Company's consolidated balance sheets. On September 7, 2022, these prepaid assets were no longer considered recoverable. The Company recorded a reduction in value of long-lived assets on its consolidated statements of operations for the amount shown in the table above during the third quarter of 2022.

(2) During 2018 and 2019, the Company placed into service second-generation ground Duplex assets (including associated developed technology and software upgrades) capable of providing commercial traffic to support Sat-Fi2®.

Additionally, the Company recorded certain costs in construction in progress for spare software associated with the second-generation Duplex assets. On September 7, 2022, the Company re-assessed its asset grouping for long-lived assets and determined that the second-generation Duplex assets are no longer part of the Company's overall satellite and ground network. These second-generation Duplex assets will no longer provide future cash flows to the Company. Note that our first-generation Duplex assets (i.e. handsets and related ground infrastructure) were not impacted. As of September 7, 2022, approximately $1.3 million was recorded in Intangible and other assets, net, and $159.9 million was recorded in Property and equipment, net. The Company recorded a reduction in value of long-lived assets on its consolidated statements of operations for this amount during 2022.

(3) During 2022, the Company wrote off approximately $0.7 million of work in progress associated with its spectrum intangible assets, previously recorded in Intangible and other assets, net, on its consolidated balance sheets. The work in progress was related to efforts to obtain spectrum licensing authority in certain countries around the world; during 2022, the Company determined that it would not continue pursing such authorities in these countries.

During 2021, the Company wrote off approximately $0.2 million of construction in progress related to unsatisfactory work that did not meet internal testing requirements and could not be used for its intended purpose. The fair value of the assets included internal and external direct costs associated with the construction in progress balance.

Series A Preferred Stock

As discussed further in Note 6: Long-Term Debt and Other Financing Arrangements, on November 15, 2022, the Company issued 149,425 shares of Series A Preferred Stock. The total fair value of the Series A Preferred Stock on the issuance date was $105.3 million, which was determined using a discounted cash flow model and a perpetuity formula for various scenarios. The most significant observable input used in the fair value measurement is the discount yield, which was 32% on the valuation date. The most significant unobservable inputs used in the fair value measurement include the probability of redemption of the preferred stock by the Company as well as the assumed method of payment (cash or accrual) of dividends.

9. COMMITMENTS AND CONTINGENCIES

Service Agreements

The Service Agreements set forth the primary terms for the Company to provide services to Partner and incur costs related primarily to new gateways and upgrades at existing gateways as well as satellite construction and launch costs. The Service Agreements have an indefinite term but provide that either party may terminate subject to certain notice requirements and, in some cases, other conditions. The Service Agreements also provide for various commitments with which the Company must comply, including to:

- Allocate 85% of its current and future network capacity to support the Services;
- Provide and maintain all resources, including personnel, software, satellite, gateways, satellite spectrum and regulatory rights necessary to provide the Services (the “Required Resources”);
- Prioritize the Services and provide Partner with priority access to the Required Resources, including the Company’s licensed satellite spectrum;
- Maintain minimum quality and coverage standards and provide continuity of service;
- Maintain minimum liquidity of $10.0 million;
- Allow Partner to recoup advance payments made to Globalstar from future service fees or, to the extent recoupment is not possible, to repay such amounts in cash; and,
- Provide the Resource Protections as defined in the Service Agreements.

The Service Agreements also require the Company (i) upon commencement of the Services, to refinance all loans outstanding under the 2019 Facility Agreement that are held by affiliates of the Thermo and (ii) to refinance all loans outstanding under the 2019 Facility Agreement that are held by persons other than Thermo by March 13, 2023 (as amended). The required refinancing of the Thermo portion of the 2019 Facility Agreement was complete in November 2022.

Partner has the right, but not the obligation, to participate in certain issuances of the Company’s equity securities, in order to maintain its percentage interest in the Company (determined on a fully diluted basis, assuming exercise of all the Warrants).

Refer to Note 1: Summary of Significant Accounting Policies, Note 2: Revenue, Note 3: Leases, Note 4: Property and Equipment, Note 6: Long-Term Debt and Other Financing Arrangements and Note 15: Stock Compensation for further discussion.

Satellite Procurement Agreement

In February 2022, the Company entered into a satellite procurement agreement with MDA pursuant to which Globalstar will acquire 17 satellites that will replenish Globalstar's existing constellation of satellites and ensure long-term continuity of its mobile satellite services. Globalstar is acquiring the satellites to provide continuous satellite services to Partner under the Service Agreements, as well as services to Globalstar’s current and future customers. Globalstar maintains the option to acquire additional satellites under the contract. Globalstar plans to contract separately for launch services and launch insurance for the new satellites. The initial contract price for 17 satellites is $327.0 million; Globalstar has the option to purchase additional satellites at a lower per unit cost, subject to certain conditions. The satellites are expected to be launched in 2025. In addition, MDA will procure a satellite operations control center for $4.9 million. Under the Service Agreements, subject to certain terms and conditions, Partner has agreed to make service payments equal to 95% of the approved capital expenditures under the satellite procurement agreement (to be paid on a straight-line basis over the useful life of the satellites) and certain other costs incurred for the new satellites, as adjusted based on certain provisions, beginning with the Phase 2 Service Period.

Refer to Note 6: Long-Term Debt and Other Financing Arrangements for further discussion of the vendor financing arrangement with MDA.

Network Obligations

The Company has purchase commitments with certain vendors related to the procurement, deployment and maintenance of the Company's network (beyond the satellite procurement agreement with MDA discussed above). As of December 31, 2022, the Company's remaining purchase obligations under these noncancelable commitments are approximately $4.1 million; the timing of payments is driven by work performed under the contracts over the remaining contract periods, which is expected to be complete during 2023.

Inventory Purchase Commitments

The Company has inventory purchase commitments with its third party product manufacturers in the normal course of business. These commitments are generally noncancelable and the order quantities are based on sales forecasts. The Company estimates that its open inventory purchase commitments as of December 31, 2022 were approximately $14.0 million.

Credit Card Processor Reserve

The Company is required to maintain a reserve of $5.0 million with its credit card processor to address any liability arising from potential charge-backs. The balance at December 31, 2022 was $5.0 million and is recorded in prepaid expenses and other current assets on the Company's consolidated balance sheet as the required reserve is held with the credit card processor.

Litigation

Due to the nature of the Company's business, the Company is involved, from time to time, in various litigation matters or subject to disputes or routine claims regarding its business activities. Legal costs related to these matters are expensed as incurred. In management's opinion, there is no pending litigation, dispute or claim, which could be expected to have a material adverse effect on the Company's financial condition, results of operations or liquidity.

10. ACCRUED EXPENSES AND OTHER NON-CURRENT LIABILITIES

Accrued expenses consist of the following (in thousands):

	December 31, 2022	December 31, 2021
Accrued compensation and benefits	$ 4,497	$ 4,687
Accrued satellite and ground costs	36,500	6,195
Accrued property and other taxes	3,293	4,053
Accrued customer liabilities and deposits	5,233	5,354
Accrued professional and other service provider fees	1,190	2,094
Accrued commissions	470	601
Accrued telecommunications expenses	657	705
Accrued inventory	874	1,474
Short-term lease liability	2,747	2,501
Accrued interest	1,291	33
Other accrued expenses	1,694	1,250
Total accrued expenses	$ 58,446	$ 28,947

Accrued satellite and ground costs in the table above includes $36.1 million of milestone work partially incurred, but not yet accepted, under the Company's satellite agreement with MDA.

Accrued compensation and benefits include primarily accrued vacation, payroll, benefits and taxes.

Other accrued expenses include primarily vendor services, warranty reserve and occupancy costs.

The following is a summary of the activity in the warranty reserve account, which is included in other accrued expenses above (in thousands):

	Year Ended December 31, 2022	2021	2020
Balance at beginning of period	$ 162	$ 212	$ 186
Provision	93	361	543
Utilization	(151)	(411)	(517)
Balance at end of period	$ 104	$ 162	$ 212

Other non-current liabilities consist of the following (in thousands):

	December 31, 2022	December 31, 2021
Employee benefit obligations (Note 12)	$ —	$ 3,289
Asset retirement obligations (Note 1)	2,953	2,461
Compound embedded derivative with the 2013 8.00% Notes (Note 7 and Note 8)	—	1,364
Compound embedded derivative with the 2019 Facility Agreement (Note 7 and Note 8)	122	—
Deferred tax liability (Note 13)	322	296
Foreign tax contingencies	530	474
Other	68	3
Total other non-current liabilities	$ 3,995	$ 7,887

Foreign tax contingencies reflect primarily amounts owed by the Company's Brazilian subsidiary pursuant to refinancing programs in country.

11. RELATED PARTY TRANSACTIONS

Thermo is the principal owner and largest stockholder of Globalstar. The Company's Executive Chairman of the Board controls Thermo. Two other members of the Company's Board of Directors are also directors, officers or minority equity owners of various Thermo entities.

Payables to Thermo and other affiliates related to normal purchase transactions were $0.3 million and $0.4 million as of December 31, 2022 and 2021, respectively.

Transactions with Thermo

Certain general and administrative expenses are incurred by Thermo on behalf of the Company. These expenses, which include non-cash expenses that the Company accounts for as a contribution to capital, related to services provided by certain executive officers of Thermo, and expenses incurred by Thermo on behalf of the Company that are charged to the Company. The expenses charged are based on actual amounts (with no mark-up) incurred by Thermo or upon allocated employee time.

The Company has a lease agreement with Thermo Covington, LLC for the Company's headquarters office. Annual lease payments started at $1.4 million per year, increasing at a rate of 2.5% per year, for a lease term of ten years. During each of the twelve months ended December 31, 2022 and 2021, the Company incurred lease expense of $1.6 million, respectively, associated with this lease agreement.

In November 2019, the Company entered into the 2019 Facility Agreement. Thermo's participation in the 2019 Facility Agreement was $95.1 million. This principal balance earned paid-in-kind interest at a rate of 13% per annum. To fulfill its obligations under the Service Agreements, in November 2022, the Company entered into an exchange agreement with affiliates of Thermo and certain other Exchanging Lenders providing for the exchange of all the outstanding principal amount of, and accrued and unpaid interest on, the Exchanging Lenders' loans under the 2019 Facility Agreement for shares of the Company's Series A Preferred Stock. The terms of the exchange agreement were reviewed and approved by the Company's Board of Directors and Audit Committee. Prior to the exchange, interest accrued since inception with respect to Thermo's portion of the debt outstanding on the 2019 Facility Agreement was approximately $44.6 million, of which $14.9 million was accrued during the twelve months ended December 31, 2022.

Also in connection with the Service Agreements, Partner and Thermo entered into a lock-up and right of first offer agreement that generally (i) requires Thermo to offer any shares of Globalstar common stock to Partner before transferring them to any other Person other than affiliates of Thermo and (ii) prohibits Thermo from transferring shares of Globalstar common stock if such transfer would cause Thermo to hold less than 51.00% of the outstanding common stock of the Company for a period of five years from the Service Launch in November 2022.

Amounts payable by the Company in connection with the 2023 Prepayment with Partner will be guaranteed by Thermo, subject to applicable shareholder approval. Prior to such shareholder approval, Thermo has agreed to provide support of certain of the Company's obligations under the Service Agreements, the Satellite Procurement Agreement, and certain related contracts directly to the Partner.

The Company has a Strategic Review Committee that is required to remain in existence for as long as Thermo and its affiliates beneficially own forty-five percent (45%) or more of Globalstar's outstanding common stock. To the extent permitted by applicable law, the Strategic Review Committee has exclusive responsibility for the oversight, review and approval of, among other things and subject to certain exceptions, any acquisition by Thermo and its affiliates of additional newly-issued securities of the Company and any transaction between the Company and Thermo and its affiliates with a value in excess of $250,000.

See Note 6: Long-Term Debt and Other Financing Arrangements for further discussion of the Company's debt and financing transactions with Thermo.

12. PENSIONS AND OTHER EMPLOYEE BENEFITS

Defined Benefit Plan

In August 2022, the Company terminated its defined benefit pension plan, which had been frozen since 2003. As such, there are no remaining pension plan obligations as of December 31, 2022. The total settlement of $7.7 million was paid out through assets held in the Globalstar Plan and cash on hand, totaling $5.0 million and $2.7 million, respectively.

Defined Benefit Pension Obligation and Funded Status

The Company's funding policy was to fund its defined benefit pension plan in accordance with the Internal Revenue Code and regulations. Below is a reconciliation of projected benefit obligation, plan assets and the funded status of the Company’s defined benefit plan (in thousands):

	Year Ended December 31,	
	2022	2021
Change in projected benefit obligation:		
Projected benefit obligation, beginning of year	$ 9,051	$ 9,179
Service cost	117	174
Interest cost	168	225
Actuarial (gain) loss	(1,340)	(45)
Settlement	(7,663)	—
Benefits paid	(333)	(482)
Projected benefit obligation, end of year	$ —	$ 9,051
Change in fair value of plan assets:		
Fair value of plan assets, beginning of year	$ 5,762	$ 5,529
Return on plan assets	(643)	485
Employer contributions	2,877	230
Settlement	(7,663)	—
Benefits paid	(333)	(482)
Fair value of plan assets, end of year	$ —	$ 5,762
Funded status, end of year-net liability	$ —	$ (3,289)

Net Benefit Cost and Amounts Recognized

Components of the net periodic benefit cost of the Company’s defined benefit pension plan were as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Net periodic benefit cost:			
Service cost	$ 117	$ 174	$ 176
Interest cost	168	225	521
Expected return on plan assets	(216)	(309)	(793)
Amortization of unrecognized net actuarial loss	91	189	300
Settlement	1,501	—	2,075
Total net periodic benefit cost	$ 1,661	$ 279	$ 2,279

In December 2020, the Company settled a portion of the pension liability. In August 2022, the remaining obligations were fully settled. In accordance with ASC 715 *Compensation — Retirement Benefits*, the Company recognized losses totaling $1.5 million and $2.1 million, respectively. These losses are included in other (expense) income in its consolidated statement of operations during the periods associated with these settlements. The losses represent the pro rata portion of actuarial losses that were previously deferred in other comprehensive income. Components of net periodic benefit cost other than the service cost component are recorded in other (expense) income in the consolidated statement of operations.

Amounts recognized in the consolidated balance sheet were as follows (in thousands):

	December 31,	
	2022	2021
Amounts recognized:		
Funded status recognized in other non-current liabilities	$ —	$ (3,289)
Net actuarial loss recognized in accumulated other comprehensive loss	—	2,073
Net amount recognized in retained deficit	$ —	$ (1,216)

Assumptions

The weighted-average assumptions used to determine the benefit obligation and net periodic benefit cost were as follows:

	Year Ended December 31,		
	2022	2021	2020
Benefit obligation assumptions:			
Discount rate	N/A	2.84 %	2.50 %
Rate of compensation increase	N/A	N/A	N/A
Net periodic benefit cost assumptions:			
Discount rate	2.84 %	2.50 %	3.28 %
Expected rate of return on plan assets	5.75 %	5.75 %	6.50 %
Rate of compensation increase	N/A	N/A	N/A

The assumptions, investment policies and strategies for the Globalstar Plan were determined by the Globalstar Plan Committee. The Globalstar Plan Committee was responsible for ensuring the investments of the plans were managed in a prudent and effective manner. Amounts related to the pension plan were derived from actuarial and other assumptions, including discount rates, mortality, expected rate of return, participant data and termination. The Company reviewed assumptions on an annual basis and made adjustments as considered necessary.

The expected rate of return on pension plan assets was selected by taking into account the expected duration of the projected benefit obligation for the plan, the asset mix of the plan and the fact that the plan assets were actively managed to mitigate risk. Discount rates were determined annually based on the Plan administrator's yield curve index, which considered expected benefit payments and was discounted with rates from the yield curve to determine a single equivalent discount rate.

Plan Assets and Investment Policies and Strategies

The plan assets were invested in various mutual funds which had quoted prices. The plan had a target allocation. On a weighted-average basis, target allocations for equity securities ranged from 50% to 60%, for debt securities 25% to 50% and for other investments 0% to 15%. The defined benefit pension plan asset allocations as of the measurement date presented as a percentage of total plan assets were as follows:

	December 31,	
	2022	2021
Equity securities	N/A	55 %
Debt securities	N/A	45
Total	N/A	100 %

The fair values of the Company’s pension plan assets by asset category were as follows (in thousands):

	December 31, 2021			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
United States equity securities	$ 2,542	$ —	$ 2,542	$ —
International equity securities	631	—	631	—
Fixed income securities	1,693	—	1,693	—
Other	896	—	896	—
Total	$ 5,762	$ —	$ 5,762	$ —

Accumulated Benefit Obligation

The accumulated benefit obligation of the defined benefit pension plan was zero and $9.1 million at December 31, 2022 and 2021, respectively.

Benefits Payments and Contributions

For 2022 and 2021, the Company contributed $2.9 million and $0.2 million, respectively, to its defined benefit pension plan.

401(k) Plan

The Company has a defined contribution employee savings plan, or “401(k),” which provides that the Company may match the contributions of participating employees up to a designated level. Under this plan, the matching contributions were approximately $0.5 million for 2022 and $0.6 million for each of 2021 and 2020.

13. TAXES

The components of income tax (benefit) expense were as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Current:			
Federal tax	$ —	$ —	$ —
State tax	82	153	54
Foreign tax	(9)	7	248
Total	73	160	302
Deferred:			
Federal and state tax	—	(459)	360
Foreign tax	—	—	—
Total	—	(459)	360
Income tax (benefit) expense	$ 73	$ (299)	$ 662

U.S. and foreign components of loss before income taxes are presented below (in thousands):

	Year Ended December 31,		
	2022	2021	2020
U.S. loss	$ (232,148)	$ (79,452)	$ (82,740)
Foreign loss	(24,694)	(33,472)	(26,237)
Total loss before income taxes	$ (256,842)	$ (112,924)	$ (108,977)

As of December 31, 2022 and 2021, the Company had cumulative U.S., state and foreign net operating loss ("NOL") carryforwards for income tax reporting purposes of approximately $2.0 billion and $1.8 billion, respectively. The vast majority of these NOL carryforwards were generated prior to 2018 and expire through 2042 (with less than 1% expiring prior to 2026) and the remaining NOL carryforwards do not expire.

The components of net deferred income tax assets (liabilities) were as follows (in thousands):

	December 31, 2022	December 31, 2021
Federal and foreign NOL and credit carryforwards	$ 479,884	$ 498,882
Property and equipment and other long-term assets	(77,925)	(114,722)
Deferred Revenue	25,774	—
Reserves and disallowed interest	8,919	10,195
Deferred tax assets before valuation allowance	436,652	394,355
Valuation allowance	(436,948)	(394,651)
Net deferred income tax liability	$ (296)	$ (296)

The deferred revenue tax asset in the table above is related to a portion of the prepayments made by Partner under the Service Agreements, which were recorded as deferred revenue on the Company's balance sheet as of December 31, 2022 (see Note 2: Revenue to our Consolidated Financial Statements for further discussion).

The change in the valuation allowance during 2022 of $42.3 million was due to a net decrease in property and equipment and other long-term assets driven primarily by an impairment of these assets (refer to Note 8: Fair Value Measurements for further information), offset partially by depreciation due to the difference between tax and book depreciable lives. Due to the limitation on utilization of state NOLs, the Company recorded deferred tax liabilities of $0.3 million as of both December 31, 2022 and 2021.

The actual provision for income taxes differs from the statutory U.S. federal income tax rate as follows (in thousands):

	Year Ended December 31, 2022	2021	2020
Provision at U.S. statutory rate of 21%	$ (53,951)	$ (23,714)	$ (22,885)
State income taxes, net of federal benefit	(4,065)	(867)	(1,386)
Change in valuation allowance (excluding impact of foreign exchange rates)	43,500	15,991	61,540
Effect of foreign income tax at various rates	(133)	176	(53)
Permanent differences	8,229	4,993	5,809
Net change in permanent items due to provision to tax return	1,855	(569)	1,914
Adjustment to reserved deferred assets	4,607	1,969	(48,485)
Adjustment to state deferred rate	136	775	4,200
Other	(105)	947	8
Total	$ 73	$ (299)	$ 662

Tax Audits

The Company operates in various U.S. and foreign tax jurisdictions. The process of determining its anticipated tax liabilities involves many calculations and estimates which are inherently complex. The Company believes that it has complied in all material respects with its obligations to pay taxes in these jurisdictions. However, its position is subject to review and possible challenge by the taxing authorities of these jurisdictions. If the applicable taxing authorities were to challenge successfully its current tax positions, or if there were changes in the manner in which the Company conducts its activities, the Company could become subject to material unanticipated tax liabilities. It may also become subject to additional tax liabilities as a result of changes in tax laws, which could in certain circumstances have a retroactive effect.

In July 2018, the Company's Canadian subsidiary was notified that its income tax returns for the years ended October 31, 2015 through 2018 had been selected for audit. The Company has provided all requested information to the Canada Revenue Agency ("CRA") and is working with the CRA to complete the audit. The CRA has completed its audit for the year ended October 31, 2016 and assessed the Company for an additional tax liability, which the Company is appealing. The Company's

NOL in Canada would largely offset this tax liability to the extent that the Company is unsuccessful in its appeal. The years ended October 31, 2017 and 2018 remain under examination.

Except for the audit noted above, neither the Company nor any of its subsidiaries is currently under audit by the IRS or by any state income tax jurisdiction in the United States. The Company's corporate U.S. tax returns for 2019 and subsequent years remain subject to examination by tax authorities. State income tax returns are generally subject to examination for a period of three to five years after filing of the respective return. The state impact of any federal changes remains subject to examination by various states for a period of up to one year after formal notification to the states.

In the Company's international tax jurisdictions, numerous tax years remain subject to examination by tax authorities, including tax returns for 2014 and subsequent years in most of the Company's international tax jurisdictions.

There are no unrecognized tax benefits as of December 31, 2022 and 2021.

Other

As of December 31, 2022, the Company had not provided foreign withholding taxes on approximately $3.2 million of undistributed earnings from certain foreign subsidiaries indefinitely invested outside the U.S.

In January 2018, the FASB released guidance on the accounting for tax on the global intangible low-taxed income ("GILTI") provisions of the Tax Act. The GILTI provisions impose a tax on foreign income in excess of a deemed return on tangible assets of foreign corporations. The Company elected to account for GILTI tax in the period in which it is incurred and therefore has not provided any deferred tax impacts of GILTI in its consolidated financial statements for the years ended December 31, 2022 and 2021.

As of December 31, 2022 and 2021, the Company recorded a value added tax ("VAT") recoverable, of which the short term portion is included in prepaid and other current assets on its consolidated balance sheet totaling $1.7 million and $5.6 million, respectively, and the long-term portion is included in intangible and other assets, net, on its consolidated balance sheet totaling $3.1 million and $0.3 million, respectively. This VAT recoverable is related primarily to certain payments for the purchase and importation of gateway equipment in various international jurisdictions in connection with the Company's network upgrade work.

In December 2022, the Company received a refund check totaling $1.8 million as a result of its eligibility for the employee retention credit under the provisions of the Coronavirus Aid, Relief and Economic Security Act for the first quarter of 2021. The Company evaluated this refund as well as its eligibility for future refunds under ASC 450 and accounts for the gain in the period in which the payment was received. Consistent with the classification of the employment taxes on qualified wages for which this credit relates, the refund was recorded as a reduction to operating expenses during the fourth quarter of 2022 on its consolidated statements of operations.

14. LOSS PER SHARE

The following table sets forth the calculation of basic and diluted loss per share and reconciles basic weighted average shares to diluted weighted average shares of common stock outstanding for the periods indicated (in thousands):

	Year ended December 31,		
	2022	2021	2020
Net loss	$ (256,915)	$ (112,625)	$ (109,639)
Effect of Series A Preferred Stock dividends	(1,337)	—	—
Adjusted net loss attributable to common shareholders	$ (258,252)	$ (112,625)	$ (109,639)
Weighted average common shares outstanding	1,800,825	1,765,139	1,642,359
Net loss per common share:			
Basic	$ (0.14)	$ (0.06)	$ (0.07)
Diluted	$ (0.14)	$ (0.06)	$ (0.07)

For the years ended December 31, 2022, 2021 and 2020, 7.7 million shares, 10.1 million shares and 4.2 million shares, respectively, of potential common stock were excluded from diluted shares outstanding because the effects of potentially dilutive securities would be anti-dilutive. Included in the potential common stock excluded from diluted shares outstanding as of December 31, 2022 are a portion of the 49.1 million Warrants issued to Partner under the Service Agreements, which was determined after considering the exercise price of each Warrant tranch relative to the average market price during the period and weighting for the period outstanding during 2022 (see Note 15: Stock Compensation for further discussion).

As discussed in Note 6: Long-Term Debt and Other Financing Arrangements, the Company's Board of Directors approved the payment of dividends totaling $1.3 million for the period November 15, 2022 through December 31, 2022 on its Series A Preferred Stock. This amount adjusts the numerator used to calculate loss per share.

15. STOCK COMPENSATION

Share-Based Payment Arrangements with Employees

The Company’s Equity Incentive Plan (“Equity Plan”) provides long-term incentives to the Company’s key employees, including officers, directors, consultants and advisers (“Eligible Participants”), and is designed to align stockholder and employee interests. Under the Equity Plan, the Company may grant incentive stock options, nonstatutory stock options, restricted stock awards, restricted stock units, and other stock based awards or any combination thereof to Eligible Participants. The Compensation Committee of the Company’s Board of Directors establishes the terms and conditions of any awards granted under the plans. At the time of grant, the Company takes into consideration the timing of the stock based award and evaluates for conditions that could result in the award to be considered spring loaded. As of December 31, 2022 and 2021, the number of shares of common stock that was authorized and remained available for issuance under the Equity Plan was 9.8 million and 21.4 million, respectively.

Stock Options

The Company has granted incentive stock options under the Equity Plan. These options have various vesting terms, but generally vest in equal installments over three years and expire in ten years. Non-vested options are generally forfeited upon termination of employment.

The Company recognizes compensation expense for stock option grants over the employee's requisite service period, which is generally based on the vesting period and the fair value at the date of grant using the Black-Scholes option pricing model. The Company uses historical data, among other factors, to estimate the expected stock price volatility, the expected option life and the expected forfeiture rate. The market price of the Company's common stock has been volatile at times. The Company makes judgmental adjustments to projected volatility during the expected term of the options, considering, among other things, historical volatility of the share prices of its peer group and expectations with regard to business conditions that may impact stock price fluctuations or stability. The Company estimates the expected term considering factors such as historical exercise patterns and the recipients of the options granted. The risk-free rate is based on the United States Treasury Department yield curve in effect at the time of grant for the expected life of the option. The Company assumes an expected dividend yield of zero for all periods. The table below summarizes the assumptions for the indicated periods:

	Year Ended December 31,		
	2022	2021	2020
Risk-free interest rate	1.4 %	0.4 %	1.7 %
Expected term of options (years)	5	5	5
Volatility	100 %	62 %	72 %
Weighted average grant-date fair value per share	$ 0.86	$ 0.17	$ 0.32

The following table represents the Company's stock option activity for the year ended December 31, 2022:

	Shares	Weighted Average Exercise Price
Outstanding at January 1, 2022	7,924,268	$ 1.30
Granted	700,000	1.16
Exercised	(371,249)	0.61
Forfeited or expired	(153,134)	2.29
Outstanding at December 31, 2022	8,099,885	1.29
Exercisable at December 31, 2022	6,562,378	$ 1.38

The intrinsic value of a stock option is the amount by which the market value of the underlying stock exceeds the exercise price of the option. For the years ended December 31, 2022 and 2021, the total intrinsic value of all stock options exercised was $0.4 million and $0.7 million, respectively. There were no options exercised during 2020. The aggregate intrinsic value of all outstanding stock options at December 31, 2022 was $2.9 million with a remaining contractual life of 5.5 years. The aggregate intrinsic value of all vested stock options that were exercisable at December 31, 2022 was $2.2 million based on a per grant calculation with a remaining contractual life of 4.9 years.

Net cash proceeds during the year ended December 31, 2022 from the exercise of stock options was $0.2 million.

For each of the years ended December 31, 2022, 2021 and 2020, the Company recognized $0.3 million of compensation expense related to stock options. As of December 31, 2022, unrecognized compensation expense related to non-vested stock options outstanding was approximately $0.4 million to be recognized over a weighted-average period of 1.9 years.

The Company adjusts its estimates of expected forfeitures of equity awards based upon its review of recent forfeiture activity and expected future employee turnover. The Company considers the impact of both pre-vesting forfeitures and post-vesting cancellations for purposes of evaluating forfeiture estimates. The effect of adjusting the forfeiture rate is recognized in the period in which the forfeiture estimate is changed.

Restricted Stock

Shares of restricted stock generally vest immediately, one year from the grant date, in equal annual installments over three years or based on performance criteria. Non-vested shares are generally forfeited upon the termination of employment. Holders of restricted stock awards are entitled to all rights of a stockholder of the Company with respect to the restricted stock, including the right to vote the shares and receive any dividends or other distributions. Compensation expense associated with restricted stock is measured based on the grant date fair value of the common stock and is recognized on a straight line basis over the vesting period. The table below summarizes the weighted average grant date fair value of restricted stock for the indicated periods:

	Year Ended December 31,		
	2022	2021	2020
Weighted average grant date fair value	$ 1.73	$ 1.23	$ 0.36

The following is a rollforward of the activity in restricted stock for the year ended December 31, 2022:

	Shares	Weighted Average Grant Date Fair Value
Nonvested at January 1, 2022	10,697,527	$ 1.01
Granted	8,231,875	1.73
Vested	(8,848,009)	1.16
Forfeited	(127,527)	1.09
Nonvested at December 31, 2022	9,953,866	

Included in the non-vested balance at December 31, 2022 are approximately 3.9 million performance-based restricted stock awards that will vest upon the achievement of certain milestones.

For the years ended December 31, 2022, 2021 and 2020, the Company recognized $10.4 million, $5.6 million and $4.5 million, respectively, of compensation expense related to restricted stock. The increase in compensation expense during 2022 was driven by performance grants to certain employees associated with their efforts under the Service Agreements. The total fair value, as calculated on the day of vesting, of restricted stock awards that vested during 2022, 2021 and 2020 was $14.6 million, $8.6 million, and $3.3 million, respectively. As of December 31, 2022, unrecognized compensation expense related to unvested restricted stock outstanding was approximately $11.7 million to be recognized over a weighted-average period of 2.0 years.

Key Employee Bonus Plan

The Company has an annual bonus plan designed to reward designated key employees' efforts to exceed the Company's financial performance goals for the designated calendar year ("Plan Year"). The bonus pool available for distribution is determined based on the Company's adjusted EBITDA performance during the Plan Year. The bonus may be paid in cash or the Company's common stock, subject to certain approvals.

For the 2022 Plan Year, the Company's adjusted EBITDA performance was within the bonus payout threshold according to the plan document. As of December 31, 2022, $1.0 million was accrued on the Company's consolidated balance sheet related to this bonus payment, which is expected to be made in the form of common stock during the first quarter of 2023.

Employee Stock Purchase Plan

The Company has an Employee Stock Purchase Plan (the “Plan”) which provides eligible employees of the Company with an opportunity to acquire shares of its common stock at a discount. The maximum aggregate number of shares of common stock that may be purchased through the Plan was 20.0 million shares as of December 31, 2022; this total includes an increase approved by the Company's Board of Directors in February 2022 totaling 6.0 million shares. The number of shares that may be purchased through the Plan will be subject to proportionate adjustments to reflect stock splits, stock dividends, or other changes in the Company’s capital stock.

The Plan permits eligible employees to purchase shares of common stock during two semi-annual offering periods beginning on June 15 and December 15 (the “Offering Periods”). Eligible employees may purchase shares of up to 15% of their total compensation per pay period, but may purchase in any calendar year no more than the lesser of $25,000 in fair market value of common stock or 500,000 shares of common stock, as measured as of the first day of each applicable Offering Period. The price an employee pays is 85% of the fair market value of common stock. Fair market value is equal to the lesser of the closing price of a share of common stock on either the first day or the last day of the Offering Period.

For 2022 and 2021, the Company received $0.7 million and $0.6 million, respectively, in proceeds related to shares issued under the Plan. For each of the years ended December 31, 2022, 2021 and 2020, the Company recorded compensation expense of approximately $0.4 million, which is reflected in marketing, general and administrative expenses. Additionally, the Company has issued approximately 12.7 million shares through December 31, 2022 related to the Plan.

The fair value of the employees’ stock purchase rights granted under the ESPP was estimated using the Black-Scholes option pricing model with the following assumptions for the following years:

	Year Ended December 31,	
	2022	2021
Risk-free interest rate	1.2 %	0.1 %
Expected term (months)	6	6
Volatility	100 %	110 %
Weighted average grant-date fair value per share	$ 0.58	$ 0.23

Share-Based Payment Arrangements with Customers

The Company may issue noncash consideration to customers. The only share-based payment arrangement currently outstanding is the warrants under the Service Agreements (the "Warrants") to purchase up to 2.64% of the Company’s outstanding common stock. The Warrants are subdivided into two tranches. Each tranche represents one half of the total number of Warrants issued, with the primary difference between the tranches being the exercise price (and therefore the grant dates). The Company evaluated the issuance of the Warrants under ASC 606 and ASC 718 and determined that the Warrants are not a payment for a distinct good or service and, accordingly, are accounted for as a reduction to the transaction price under ASC 606. The classification and measurement of the consideration paid to Partner was evaluated under ASC 718. The Company determined that the Warrants contained a performance condition upon issuance, which was contingent upon commencement of service under the Service Agreements. As Service Launch was November 15, 2022, the performance condition was met and the Warrants vested.

On November 15, 2022, the Company recorded the total fair value of the Warrants totaling $48.3 million in accumulated paid-in-capital on its consolidated balance sheet with a corresponding offset to a contract asset, which was netted against the deferred revenue balance associated with Partner. As of December 31, 2022, no warrants have been exercised by Partner.

The fair value of the Warrants issued to Partner was estimated using the Black-Scholes option pricing model with the following assumptions on the valuation date of November 15, 2022.

	Tranche 1	Tranche 2
Number of Warrants (in millions)	24.6	24.6
Grant date	2/24/2020	5/28/2021
Exercise price	$ 0.43	$ 1.60
Expected term (years)	17.73	16.47
Risk-free interest rate	1.63 %	1.92 %
Volatility	97.29 %	97.29 %
Black-Scholes fair value per share	$ 0.42	$ 1.54
Total fair value	$ 10,429,763	$ 37,907,181

The expected term of the Warrants is consistent with the expected term of the Company's performance obligations under the Service Agreements measured as the period beginning with Phase 1 service launch through the design life of the satellites that will support Phase 2 service. The Company allocated the fair value of the Warrants amongst the stand alone selling price for each phase of service under the Service Agreements and records a reduction to revenue over the estimated term of the Service Agreements.

16. ACCUMULATED OTHER COMPREHENSIVE LOSS

Accumulated other comprehensive loss includes all changes in equity during a period from non-owner sources. The change in accumulated other comprehensive loss for all periods presented resulted from foreign currency translation adjustments and minimum pension liability adjustments.

The components of accumulated other comprehensive loss were as follows (in thousands):

	December 31,	
	2022	2021
Accumulated minimum pension liability adjustment	$ —	$ (2,073)
Accumulated net foreign currency translation adjustment	9,242	3,963
Total accumulated other comprehensive income	$ 9,242	$ 1,890

During 2022, the Company settled the remaining obligations under the pension plan; accordingly, no amounts are reflected in the table above. See further discussion in Note 12: Pensions and Other Employee Benefits.

No amounts were reclassified out of accumulated other comprehensive loss for the periods shown above.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

Not applicable.

Item 9A. Controls and Procedures

(a) Evaluation of disclosure controls and procedures

Our management, with the participation of our Principal Executive Officer and Principal Financial Officer, evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15(b) under the Securities Exchange Act of 1934 as of December 31, 2022, the end of the period covered by this Report. This evaluation was based on the guidelines established in *Internal Control - Integrated Framework* issued in 2013 by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives.

Based on this evaluation, each of our Principal Executive Officer and Principal Financial Officer concluded that as of December 31, 2022 our disclosure controls and procedures were effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms, and that such information is accumulated and communicated to our management, including our Principal Executive Officer and Principal Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

We believe that the Consolidated Financial Statements included in this Report fairly present, in all material respects, our consolidated financial position and results of operations as of and for the year ended December 31, 2022.

(b) Changes in internal control over financial reporting

As of December 31, 2022, our management, with the participation of our Principal Executive Officer and Principal Financial Officer, evaluated our internal control over financial reporting. During the first quarter of 2022, we implemented a new enterprise resource planning ("ERP") system, which replaced our existing financial systems. The implementation and transition to the new ERP system resulted in changes to our reporting processes and our internal control over financial reporting, by automating certain manual procedures and standardizing business processes and reporting across the organization. As a result of this implementation, there were anticipated changes to our internal control over financial reporting, none of which adversely affected the Company's internal control over financial reporting. We will continue to monitor our internal control over financial reporting under the new system, including evaluating the operating effectiveness of related key controls. Based on that evaluation, our Principal Executive Officer and Principal Financial Officer concluded that no changes in our internal control over financial reporting occurred during the year ended December 31, 2022 have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Annual Report on Internal Control over Financial Reporting

Management of the Company, including our Principal Executive Officer and Principal Financial Officer, is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) of the Securities Exchange Act of 1934, as amended. The Company's internal controls were designed to provide reasonable assurance as to the reliability of our financial reporting and the preparation and presentation of the Consolidated Financial Statements for external purposes in accordance with accounting principles generally accepted in the United States and 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.

The Company conducted an evaluation of the effectiveness of its internal control over financial reporting based on the criteria in *Internal Control - Integrated Framework* issued in 2013 by the Committee of Sponsoring Organizations of the Treadway Commission. This evaluation included review of the documentation of controls, evaluation of the design effectiveness of controls, testing of the operating effectiveness of controls and a conclusion on this evaluation. Through this evaluation, management did not identify any material weakness in the Company's internal control over financial reporting.

There are inherent limitations in the effectiveness of any system of internal control over financial reporting; however, based on the evaluation, management has concluded the Company's internal control over financial reporting was effective as of December 31, 2022.

The Company’s internal control over financial reporting as of December 31, 2022 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report, which appears herein.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item is incorporated by reference from the applicable information set forth in "Executive Officers," "Election of Directors," "Information about the Board of Directors and its Committees," and "Security Ownership of Directors and Executive Officers - Section 16(a) Beneficial Ownership Reporting Requirements" which will be included in our definitive Proxy Statement for our 2023 Annual Meeting of Stockholders to be filed with the SEC, and Part I, Item 1. Business - Additional Information in this Report.

Item 11. Executive Compensation

The information required by this item is incorporated by reference from the applicable information set forth in "Compensation of Executive Officers", "Compensation of Directors" and "2022 Pay Ratio" which will be included in our definitive Proxy Statement for our 2023 Annual Meeting of Stockholders to be filed with the SEC.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item is incorporated by reference from the applicable information set forth in "Security Ownership of Principal Stockholders and Management" and "Equity Compensation Plan Information" which will be included in our definitive Proxy Statement for our 2023 Annual Meeting of Stockholders to be filed with the SEC.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated by reference from the applicable information set forth in "Other Information - Related Person Transactions" and "Information about the Board of Directors and its Committees" which will be included in our definitive Proxy Statement for our 2023 Annual Meeting of Stockholders to be filed with the SEC.

Item 14. Principal Accountant Fees and Services

The information required by this item is incorporated by reference from the applicable information set forth in "Other Information - Globalstar's Independent Registered Accounting Firm" which will be included in our definitive Proxy Statement for our 2023 Annual Meeting of Stockholders to be filed with the SEC.

PART IV

Item 15. Exhibits and Financial Statement Schedules

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

(1) Financial Statements and Report of Independent Registered Public Accounting Firm

Report of Independent Registered Public Accounting Firm
Consolidated balance sheets at December 31, 2022 and 2021
Consolidated statements of operations for the years ended December 31, 2022, 2021 and 2020
Consolidated statements of comprehensive income (loss) for the years ended December 31, 2022, 2021 and 2020
Consolidated statements of stockholders' equity for the years ended December 31, 2022, 2021 and 2020
Consolidated statements of cash flows for the years ended December 31, 2022, 2021 and 2020
Notes to Consolidated Financial Statements

(2) Financial Statement Schedules

All schedules are omitted because they are not applicable or the required information is in the financial statements or notes thereto.

(3) Exhibits

See Exhibit Index

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.

GLOBALSTAR, INC.

Date: March 1, 2023

By: /s/ David B. Kagan
David B. Kagan
Chief Executive Officer

POWER OF ATTORNEY

KNOW BY ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints David B. Kagan and Rebecca S. Clary, jointly and severally, his or her attorney-in-fact, with the power of substitution, for him or her in any and all capacities, to sign any amendments to this Annual Report on Form 10-K and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his or her substitute or substitutes, may do or cause to be done by virtue hereof.

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 indicated as of March 1, 2023.

Signature	Title
/s/ David B. Kagan David B. Kagan	Chief Executive Officer (Principal Executive Officer)
/s/ Rebecca S. Clary Rebecca S. Clary	Chief Financial Officer (Principal Financial and Accounting Officer)
/s/ James Monroe III James Monroe III	Director
/s/ William A. Hasler William A. Hasler	Director
/s/ James F. Lynch James F. Lynch	Director
/s/ Michael J. Lovett Michael J. Lovett	Director
/s/ Keith O. Cowan Keith O. Cowan	Director
/s/ Benjamin G. Wolff Benjamin G. Wolff	Director
/s/ Timothy E. Taylor Timothy E. Taylor	Director

EXHIBIT INDEX

Exhibit Number	Description
3.1*	Third Amended and Restated Certificate of Incorporation of Globalstar, Inc. (Appendix A to DEF 14A filed April 12, 2021)
3.2*	Fourth Amended and Restated Bylaws of Globalstar, Inc. (Exhibit 3.1 to Form 8-K filed on April 15, 2019)
3.3*	Certificate of Designation filed November 15, 2022 (Exhibit 3.1 to Form 8-K filed on November 16, 2022)
4.1*	Indenture between Globalstar, Inc. and U.S. Bank, National Association as Trustee dated as of April 15, 2008 (Exhibit 4.1 to Form 8-K filed April 16, 2008)
4.2*	Fourth Supplemental Indenture between Globalstar, Inc. and U.S. Bank, National Association as Trustee dated as of May 20, 2013, including Form of Global 8% Convertible Senior Note due 2028 (Exhibit 4.1 to Form 8-K filed May 20, 2013)
4.3	Description of Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934
10.1*	Amended and Restated Loan Agreement between Globalstar, Inc., and Thermo Funding Company LLC dated as of July 31, 2013 (Exhibit 10.4 to Form 8-K filed August 22, 2013)
10.2*	Settlement Agreement dated December 14, 2018 (Exhibit 10.1 to form 8-K filed December 17, 2018)
10.3*	Lease Agreement by and between Globalstar, Inc. and Thermo Covington, LLC dated February 1, 2019 (Exhibit 10.1 to Form 10-Q filed May 2, 2019)
10.4*	Form of Indemnification Agreement between Globalstar, Inc. and its Directors dated February 26, 2019 (Exhibit 10.50 to Form 10-K filed February 28, 2019)
10.5*	Subordinated Loan Agreement Dated as of July 2, 2019 by and among Globalstar, Inc. and Other Lenders (Exhibit 10.1 to Form 10-Q filed August 9, 2019)
10.6*	Fourth Global Amendment and Restatement Agreement dated as of November 26, 2019 between Globalstar, Inc., Thermo Funding Company LLC, BNP Paribas and the other lenders thereto Amendment and Restatement Agreement dated as of November 26, 2019 between Globalstar, Inc., Thermo Funding Company LLC, BNP Paribas and the other lenders thereto (Exhibit 10.37 to Form 10-K filed February 28, 2020)
10.7*	Fourth Amended and Restated Facility Agreement dated as of November 26, 2019 between Globalstar, Inc., BNP Paribas and the other lenders party thereto (Exhibit 10.38 to Form 10-K filed February 28, 2020)
10.8*	Second Lien Facility Agreement dated as of November 26, 2019 between Globalstar, Inc., Global Loan Agency Services Limited, GLAS Trust Corporation Limited and other lenders thereto (Exhibit 10.39 to Form 10-K filed February 28, 2020)
10.9*	Form of Common Stock Purchase Warrant dated November 27, 2019 between Globalstar, Inc. and other lenders thereto (Exhibit 10.40 to Form 10-K filed February 28, 2020)
10.10*	Registration Rights Agreement dated November 26, 2019 between Globalstar, Inc. and other lenders thereto (Exhibit 10.41 to Form 10-K filed February 28, 2020)
10.11*	Intercreditor Agreement dated November 26, 2019 between BNP Paribas, Global Loan Agency Services Limited, The Senior Lenders, The Second Lien Lenders, Globalstar, Inc., BNP Paribas, GLAS Trust Corporation Limited and other lenders thereto (Exhibit 10.42 to Form 10-K filed February 28, 2020)
10.12*	Third Amended and Restated Globalstar, Inc. 2006 Equity Incentive Plan (Appendix A to Definitive Proxy Statement filed April 16, 2019)
10.13*	Amended and Restated Employee Stock Purchase Plan (Appendix B to Definitive Proxy Statement filed April 16, 2019)
10.14*	Form of Restricted Stock Units Agreement for Non-U.S. Designated Executives under the Globalstar, Inc. 2006 Equity Incentive Plan (Exhibit 10.2 to Form 10-Q filed August 14, 2007)
10.15*	Form of Notice of Grant and Restricted Stock Agreement under the Globalstar, Inc. 2006 Equity Incentive Plan (Exhibit 10.29 to Form 10-K filed March 17, 2008)
10.16*	Form of Non-Qualified Stock Option Award Agreement for Members of the Board of Directors under the Globalstar, Inc. 2006 Equity Incentive Plan (Exhibit 10.1 to Form 8-K filed November 20, 2008)
10.17*	Form of Stock Option Award Agreement for use with executive officers (Exhibit 10.45 to Form 10-K filed March 31, 2011)

10.18*†	2019 Key Employee Bonus Plan (Exhibit 10.52 to Form 10-K Filed February 28, 2020)
10.19*††	2020 Key Employee Bonus Plan (Exhibit 10.1 to Form 10-Q filed November 5, 2020)
10.20*††	2021 Key Employee Bonus Plan (Exhibit 10.24 to Form 10-K Filed March 4, 2021)
10.21*††	2022 Key Employee Bonus Plan (Exhibit 10.21 to Form 10-K filed February 25, 2022)
10.22*	Letter Agreement with David Kagan dated November 27, 2017 (Exhibit 10.55 to Form 10-K filed February 23, 2018)
10.23*	Letter Agreement with David Kagan dated September 4, 2018 (Exhibit 10.59 to Form 10-K filed February 28, 2019)
10.24*††	Amended and Restated Prepayment Agreement dated May 19, 2021 (Exhibit 10.1 to Form 10-Q filed August 5, 2021)
10.25*††	Satellite Procurement Agreement dated February 21, 2022 between Globalstar, Inc. and Macdonald, Dettwiler and Associates Corporation (Exhibit 10.1 to Form 10-Q filed May 5, 2022)
10.26*††	Conformed Copy of Key Terms Agreement reflecting amendments through September 7, 2022 (Exhibit 10.1 to Form 8-K filed September 7, 2022)
10.27*††	Exchange Agreement dated November 15, 2022 (Exhibit 10.1 to Form 8-K filed November 16, 2022)
10.28*††	Letter Agreement dated November 15, 2022 (Exhibit 10.2 to Form 8-K filed November 16, 2022)
10.29††	Forbearance Agreement between Globalstar, Inc. and Macdonald, Dettwiler and Associates Corporation dated October 28, 2022
10.30††	Second Forbearance Agreement among Globalstar, Inc., Macdonald, Dettwiler and Associates Corporation and Rocket Lab USA, Inc. dated January 31, 2023
21.1	Subsidiaries of Globalstar, Inc.
23.1	Consent of Ernst & Young LLP
24.1	Power of Attorney (included as part of page titled "Signatures")
31.1	Section 302 Certification of Principal Executive Officer of Globalstar, Inc.
31.2	Section 302 Certification of Principal Financial Officer of Globalstar, Inc.
32.1	Section 906 Certification of Principal Executive Officer of Globalstar, Inc.
32.2	Section 906 Certification of Principal Financial Officer of Globalstar, Inc.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
*	Incorporated by reference.
†	Portions of the exhibit have been omitted pursuant to a request for confidential treatment filed with the Commission. The omitted portions have been filed with the Commission.
††	Portions of the exhibit have been omitted pursuant to Item 601(b)(10) of Regulation S-K.

**DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934**

As of December 31, 2022, Globalstar, Inc. (the "Company") had one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended: our common stock.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock is a summary and does not purport to be complete. It is subject to and qualified in its entirety by reference to our certificate of incorporation and our bylaws, each of which are incorporated by reference as an exhibit to the Annual Report on Form 10-K of which this Exhibit 4.3 is a part. We encourage you to read our certificate of incorporation, our bylaws and the applicable provisions of the Delaware General Corporation Law, Title 8 of the Delaware Code, for additional information.

Common Stock

General. We are authorized to issue 2.15 billion shares of common stock, par value $0.0001 per share. All outstanding shares of common stock are, and all shares of common stock to be issued under existing obligations, including under our employee stock plans and convertible notes, will be, fully-paid and nonassessable.

Dividends. Subject to preferences that may be granted to holders of any preferred stock and restrictions under our credit facilities, the holders of our common stock will be entitled to dividends as may be declared from time to time by the board of directors from funds available therefor.

Voting Rights. Each share of common stock entitles its holder to one vote on all matters to be voted on by the stockholders. Our certificate of incorporation does not provide for cumulative voting in the election of directors. Generally, all matters to be voted on by the stockholders must be approved by a majority or, in the case of the election of directors, by a plurality, of the votes present in person or by proxy and entitled to vote. While Thermo Capital Partners, L.L.C. and any of its affiliates (collectively, "Thermo"), beneficially own 45% or more of the shares of our common stock, two directors will be elected by a vote of the holders of shares of common stock not affiliated with Thermo ("Minority Directors"). Additionally, even if Thermo owns 70% or more of the voting power of our stock, Thermo may not vote more than 69.9% of the voting power of the shares eligible to vote in the election of any directors.

Preemptive Rights. Holders of common stock do not have preemptive rights with respect to the issuance and sale by the company of additional shares of common stock or other equity securities of the company.

Liquidation Rights. Upon dissolution, liquidation or winding-up, the holders of shares of common stock will be entitled to receive our assets available for distribution proportionate to their pro rata ownership of the outstanding shares of common stock.

Preferred Stock

Our board of directors has the authority, without further action of our stockholders, to issue up to 100 million shares of preferred stock, par value $0.0001 per share, in one or more series, to determine the number of shares constituting and the designation of each series and to fix the powers, preferences, rights and qualifications, limitations or restrictions thereof, which may include dividend rights, conversion rights, voting rights, terms of redemption, and liquidation preferences.

There are no restrictions on the repurchase or redemption of preferred stock by the Company in the event of any arrearage in the payment of dividends or sinking fund installments.

The issuance of preferred stock could adversely affect the holders of common stock. The potential issuance of preferred stock may discourage bids for shares of our common stock at a premium over the market price of our common stock, may adversely affect the market price of shares of our common stock and may discourage, delay or prevent a change of control.

Anti-takeover Effects of Certain Provisions of Our Amended and Restated Certificate of Incorporation and Bylaws and of Delaware General Corporation Law

The provisions of the Delaware General Corporation Law and our amended and restated certificate of incorporation and bylaws summarized below may have the effect of discouraging, delaying or preventing a hostile takeover, including one that might result in a premium being paid over the market price of our common stock, and discouraging, delaying or preventing changes in the control or management of the Company.

Certificate of Incorporation and Bylaws

Our certificate of incorporation and bylaws provide that:

- if Thermo does not own a majority of our outstanding capital stock entitled to vote in the election of directors, no action can be taken by stockholders except at an annual or special meeting of the stockholders called in accordance with our bylaws, and stockholders may not act by written consent;
- while Thermo owns a majority of our outstanding capital stock entitled to vote in the election of directors, action can be taken by written consent signed by the number of stockholders necessary to authorize or take such action at a meeting;
- if Thermo does not own a majority of our outstanding capital stock entitled to vote in the election of directors, the approval of holders of 66 2/3% of the shares then entitled to vote in the election of directors will be required to adopt, amend or repeal our bylaws;
- while Thermo owns a majority of our outstanding capital stock entitled to vote in the election of directors, the approval of the majority of the holders of the shares then entitled to vote in the election of directors will be required to adopt, amend or repeal our bylaws;
- our board of directors is expressly authorized to make, alter or repeal our bylaws;
- stockholders may not call special meetings of the stockholders or fill vacancies on the board of directors;
- our board of directors are divided into three classes of service with staggered three-year terms, meaning that only one class of directors will be elected at each annual meeting of stockholders, with the other classes continuing for the remainder of their respective terms;
- our board of directors is authorized to issue preferred stock without stockholder approval;
- if Thermo does not own a majority of our outstanding capital stock entitled to vote in the election of directors, directors may only be removed for cause by the holders of 66 2/3% of the shares then entitled to vote in the election of directors;
- while Thermo owns a majority of our outstanding capital stock entitled to vote in the election of directors, directors may be removed with or without cause; *provided that*, Thermo may not vote on, or consent to, or have any voting power in respect to, the removal without cause of the Minority Directors; and

- we will indemnify directors and certain officers against losses they may incur in connection with investigations and legal proceedings resulting from their service to us, which may include services in connection with takeover defense measures.

The anti-takeover and other provisions of our certificate of incorporation and by-laws could discourage potential acquisition proposals and could delay or prevent a change in control. These provisions are intended to enhance the likelihood of continuity and stability in the composition of the board of directors and in the policies formulated by the board of directors and to discourage certain types of transactions that may involve an actual or threatened change of control. These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal. The provisions also are intended to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and, as a consequence, they also may inhibit fluctuations in the market price of our shares that could result from actual or rumored takeover attempts. Such provisions also may have the effect of preventing changes in our management.

Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law regulating corporate takeovers, which prohibits a Delaware corporation from engaging in any business combination with an “interested stockholder” for three years after the person becomes an interested stockholder unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding (a) shares owned by persons who are directors and also officers and (b) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to the date of the transaction, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Except as otherwise specified in Section 203, an “interested stockholder” is defined to include (a) any person that is the owner of 15% or more of the outstanding voting securities of the corporation, or is an affiliate or associate of the corporation and was the owner of 15% or more of the outstanding voting stock of the corporation at any time within three years immediately prior to the date of determination and (b) the affiliates and associates of any such person. Thermo is not an “interested stockholder” because it acquired more than 15% of our outstanding stock prior to the completion of our initial public offering.

For purposes of Section 203, the term “business combinations” includes mergers, consolidations, asset sales or other transactions that result in a financial benefit to the interested stockholder and transactions that would increase the interested stockholder’s proportionate share ownership of our company.

Under some circumstances, Section 203 makes it more difficult for an interested stockholder to effect various business combinations with us. Although our stockholders have the right to exclude us from the restrictions imposed by Section 203, they have not done so. Section 203 may encourage companies interested in acquiring us to negotiate in advance with the board of directors, because the requirement stated above regarding stockholder approval would be avoided if a majority of the directors approves, prior to the time the party became an interested stockholder, either the business combination or the transaction which results in the stockholder becoming an interested stockholder.

Forum Selection Provision

Our Bylaws provide that, unless the Company consents in writing to the selection of an alternative forum, the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the Company; (ii) any action asserting a claim for or based on a breach of a fiduciary duty owed by any current or former director or officer or other employee of the Company to the Company or to the Company's shareowners, including a claim alleging the aiding and abetting of such a breach of fiduciary duty; (iii) any action asserting a claim against the Company or any current or former director or officer or other employee of the Company arising pursuant to any provision of the General Corporation Law of the State of Delaware or the Company's Certificate of Incorporation or Bylaws (as either may be amended from time to time); (iv) any action asserting a claim related to or involving the Company that is governed by the internal affairs doctrine; or (v) any action asserting an "internal corporate claim" as that term is defined in Section 115 of the General Corporation Law of the State of Delaware shall be a state court located within the State of Delaware (or, if no state court located within the State of Delaware has jurisdiction, the federal court for the District of Delaware).

Section 27(a) of the Securities Exchange Act of 1934 (the "Exchange Act") confers exclusive jurisdiction over all suits and actions to enforce a liability or duty created under the Exchange Act or the rules and regulations thereunder. Accordingly, the provisions above do not apply to any such suits or actions. In addition, a recent decision of the Delaware Court of Chancery has held that exclusive forum provisions of the kind included in the Company's Bylaws do not apply to claims arising under the Securities Act of 1933. Unless action by the Delaware legislature or the Delaware courts provides otherwise, the provisions above will also not apply to such claims.

This forum selection provision may limit the ability of holders of our shares to bring a claim arising in other instances in a judicial forum that such shareholders find favorable for disputes with us or our directors or officers, which may discourage such lawsuits against the Company and/or our directors and officers. Alternatively, if a court outside of the State of Delaware were to find this forum selection provision inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or claims described above, we may incur additional costs associated with resolving such matters in other jurisdictions, which could harm our business, prospects, financial condition and results of operations.

Strategic Review Committee

As part of the settlement of the previously disclosed shareholder action against us, captioned *Mudrick Capital Management, LP, et al. v. Monroe, et al.*, C.A. No. 2018-0699-TMR, our certificate of incorporation and bylaws were amended to require us to form a Strategic Review Committee that is required to remain in existence for as long as Thermo beneficially owns 45% or more of our outstanding common stock. To the extent permitted by applicable law, the Strategic Review Committee has exclusive responsibility for the oversight, review and approval of, among other things and subject to certain exceptions, any acquisition by Thermo of additional newly-issued securities of the Company and any transaction between the Company and Thermo with a value in excess of $250,000. The approval of any of the foregoing transactions will require the vote of at least three members of the Strategic Review Committee.

Limitation of Liability of Directors

Our certificate of incorporation provides that no director shall be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability as follows:

- for any breach of the director’s duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; and
- for any transaction from which the director derived an improper personal benefit.

Listing

Our common stock is listed on the NYSE American under the trading symbol “GSAT.”

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Investor Services LLC.

Exhibit 10.29

Certain portions of this document have been omitted pursuant to Item 601(b)(10) of Regulation S-K and, where applicable, have been marked with "[*]" to indicate where omissions have been made. The marked information has been omitted because it is (i) not material and (ii) is the type that the registrant treats as private or confidential.

This Forbearance Agreement (this "Agreement") is entered into as of October 28, 2022 by and between:

Globalstar, Inc., a Delaware corporation having its principal place of business at 1351 Holiday Square Boulevard, Covington, Louisiana 70433, United States, and

Macdonald, Dettwiler and Associates Corporation, a Canadian corporation having its principal place of business at 21025 Trans- Canada Highway, Ste-Anne-De-Bellevue, Quebec, Canada H9X 3R2.

<u>Recitals</u>

A. [*]

B. Globalstar has requested that Contractor forbear from exercising its rights and remedies under the SPA, and Contractor is so willing to forbear for a limited period of time, provided that Globalstar complies with the terms and conditions of this Agreement.

Now therefore, in consideration of the mutual covenants, terms and conditions set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. <u>Definitions</u>. Capitalized terms used herein and not otherwise defined shall have the meanings ascribed thereto in the SPA.

2. [*]

3. <u>Initial Payment; [*] and Amendment to the SPA</u>. Subject to and upon receipt by Contractor of a payment by Globalstar in the amount of USD $7,000,000 within two (2) business days of the date of this Agreement:

(a) Contractor will provide written confirmation to Globalstar that the Breach Notice is retracted and of no further force and effect and that Contractor waives its right to claim a breach or default and to pursue any remedies [*]; and

[*]

4. <u>Additional Payment; Interest</u>. In addition to the USD $7,000,000 payment contemplated by Section 3 of this Agreement, Globalstar shall pay Contractor (i) an additional payment in the amount of USD $7,000,000 on or before November 15, 2022 and (ii) interest on the Deferred Payments outstanding as 16 September 2022 at a rate of 7% per annum. Such interest shall accrue commencing on 16 September 2022 and continue until the outstanding Deferred Payments are paid in full, and shall be calculated daily on the amount of Deferred Payments outstanding on such day and compounded monthly. Globalstar shall pay Contractor the accrued interest within five (5) days of the Deferred Payment Date.

5. <u>Other Agreements of the Parties</u>.

(a) Globalstar will provide Contractor with regular status updates and such other information requested by Contractor regarding its efforts to secure financing for the Project. Such status updates and other information will be provided to Contractor upon request.

(b) The two USD $7,000,000 payments contemplated by Sections 3 and 4 of this Agreement shall be, if and when received by Contractor, credited as a partial payment against the outstanding Deferred Payments.

(c) [*]. All other terms and conditions of the SPA remain in full force and effect, including Contractor's obligations to ensure the Project remains on schedule, including the work of any Major Subcontractor. Nothing in this Agreement, nor any actions taken in accordance with this Agreement, shall be construed as a waiver of or consent to any other existing or future defaults under the SPA.

6. Default under this Agreement. In the event that Globalstar fails to make either USD $7,000,000 payment contemplated in Sections 3 or 4 of this Agreement, Globalstar shall have a period of five (5) days following receipt of written notice thereof from Contractor to cure such failure. In the event that Globalstar fails to cure such failure(s) within such cure period Contractor may, at its discretion and at any time until such breach is cured, issue a Contractor Stop Work Order in accordance with Article 9 (Stop Work) of the SPA,[*].

7. Miscellaneous. In the event of a conflict or inconsistency between this Agreement and the SPA, the terms and conditions of this Agreement will prevail. The terms and conditions of Attachment 2 of the SPA shall apply to this Agreement, *mutatis mutandis.*

Acknowledged and agreed by their duly authorized representatives.

Globalstar, Inc.

By:

Name:

Date:

Macdonald, Dettwiler and Associates Corporation

By:

Name:

Date:

Certain portions of this document have been omitted pursuant to Item 601(b)(10) of Regulation S-K and, where applicable, have been marked with "[*]" to indicate where omissions have been made. The marked information has been omitted because it is (i) not material and (ii) is the type that the registrant treats as private or confidential.

This Second Forbearance Agreement (this "**Agreement**") is entered into as of January 31, 2023 by and among:

Globalstar, Inc., a Delaware corporation having its principal place of business at 1351 Holiday Square Boulevard, Covington, Louisiana 70433, United States ("**Globalstar**"),

Macdonald, Dettwiler and Associates Corporation, a Canadian corporation having its principal place of business at 21025 Trans-Canada Highway, Ste-Anne-De-Bellevue, Quebec, Canada H9X 3R2 ("**Contractor**"), and,

Solely for the purposes of Section 2, Rocket Lab USA, Inc., a Delaware corporation having its principal place of business at 3881 McGowen Street, Long Beach, CA 90808, United States ("**Subcontractor**").

<u>Recitals</u>

A. [*]

B. [*]

C. [*]

D. Globalstar has requested that Contractor forbear from exercising its rights and remedies under the SPA and the First Forbearance Agreement in respect of the Overdue Amount.

E. Contractor is willing to forbear for a limited period of time provided that Globalstar complies with the terms and conditions of this Agreement.

Now therefore, in consideration of the mutual covenants, terms and conditions set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. <u>Payments to Contractor; Contractor Forbearance</u>. Subject to and upon receipt by Contractor of a cash payment by Globalstar in the amount of US $20,000,000 on or prior to January 31, 2023, Contractor agrees to forbear from exercising its rights and remedies against Globalstar under the SPA and the First Forbearance Agreement during the Forbearance Period with respect to the failure to pay the Overdue Amount. As used herein "**Forbearance Period**" means the period commencing on the date hereof and ending on the earlier to occur of (i) March 15, 2023 and (ii) the date that any Forbearance Default (as defined below) occurs. Contractor's forbearance, as provided herein, shall immediately and automatically cease without notice or further action on the earlier to occur of (i) or (ii) (the "**Termination Date**").

On or before March 15, 2023, Globalstar shall also pay to Contractor (a) the then remaining balance of the Overdue Amount, together with all accrued interest on the Overdue Amount as calculated in accordance with the terms of the First Forbearance Agreement and (b) any and all other amounts then due and payable to Contractor under the SPA as of March 15, 2023.

On and after the Termination Date, Contractor may, in its sole discretion, exercise any and all remedies available to it under the SPA and the First Forbearance Agreement by reason of the occurrence of any events of default or breach thereunder or the continuation of any default in respect of the Overdue Amount or any failure by Globalstar to pay any other amounts due and payable as of March 15, 2023 under the SPA or the First Forbearance Agreement, in each case in accordance with the terms thereof.

“**Forbearance Default**” means (a) Globalstar fails to abide by or observe any material term, condition, covenant or other provision contained in this Agreement; (b) Globalstar materially breaches or is otherwise in default under the terms or conditions of the SPA; or (c) Globalstar becomes insolvent, makes an assignment for the benefit of creditors, or files or is the subject of a petition in bankruptcy.

2. Subcontractor Stock Payment.

The Subcontractor, Contractor and Globalstar agree that, if Globalstar elects in its sole discretion to pay the Work Fee (as defined below), they will negotiate in good faith during the Forbearance Period toward a mutually acceptable stock purchase agreement and related documents, including customary registration rights and indemnities (collectively, the “**Definitive Stock Agreement**”), which is expected to provide for the payment of one or more invoices issued by the Subcontractor under the Rocket Lab Agreement (such invoices, “**Subcontractor Payables**”) by Globalstar (on behalf of the Contractor) in one or multiple tranches (each a “**Stock Payment**”), which shall be via a number of fully paid and nonassessable shares of common stock of Globalstar, par value US $0.0001 per share (the “**Common Stock**”) equal to, for any Subcontractor Payable. (i)(A) the amount of each such Subcontractor Payable divided by (B) the volume-weighted average closing price of the Common Stock for the 5 trading days immediately preceding the date on which the Common Stock is delivered or (ii) such other amount or formula as otherwise mutually agreed between Globalstar, Contractor and Subcontractor; *provided* that it is the intention of the parties that the aggregate value of all Common Stock conveyed under a Stock Payment for any Subcontractor Payable be sufficient to permit Subcontractor to receive net proceeds from the sale of any such shares of Common Stock by Subcontractor equal to the face amount of such Subcontractor Payable, taking into account out-of-pocket selling and other out-of-pocket costs associated with the Stock Payments as agreed to in the Definitive Stock Agreement. Nothing in this Forbearance Agreement shall constitute a commitment by Subcontractor to enter into a Stock Purchase Agreement or accept Stock Payments in satisfaction of one or more Subcontractor Payables. In the event that Subcontractor does agree to enter into the contemplated Stock Purchase Agreement, the Rocket Lab Agreement will remain in full force and effect except as expressly provided in such Stock Purchase Agreement.

Contractor agrees that it will issue a credit to Globalstar in an amount equal to the aggregate value realized by Subcontractor from the Stock Payments actually made, subject to a maximum amount of the Subcontractor Amount, which credit shall be applied to any amounts, other than the Overdue Amount, payable by Globalstar to Contractor under the SPA.

Notwithstanding the foregoing or anything else in this Agreement, unless and until any Definitive Stock Agreement has been approved and entered into with respect to any Stock Payment, which shall be in the sole and absolute independent discretion of each of Globalstar, Contractor and Subcontractor and subject to Subcontractor obtaining board approval, nothing in this Agreement shall impair, amend or modify the Rocket Lab Agreement or any obligation of Globalstar or Contractor, or the rights of Subcontractor thereunder.

Subcontractor shall not be required to participate in any negotiation with respect to a Definitive Stock Agreement or a Stock Purchase unless Globalstar has delivered a work fee in the amount of $50,000 (the “**Work Fee**”), which amount will be used to pay Subcontractor’s reasonable, documented, out-of-pocket expenses (including reasonable, documented, out-of-pocket fees and expenses of counsel for Subcontractor) incurred after the date hereof in connection with negotiating definitive documentation for the Stock Purchases and otherwise consummating the transactions proposed hereunder (collectively, “**Transaction Expenses**”). For the avoidance of doubt, Globalstar shall not be required to pay the Work Fee, and may elect not to do so in its sole discretion, but Subcontractor shall not be required to negotiate with Globalstar with respect to a Definitive Stock Agreement or a Stock Payment unless Globalstar has paid to it the Work Fee. Following payment of the Work Fee, in Globalstar’s sole discretion, in the event Transaction Expenses exceed the Work Fee, Subcontractor may submit invoices to Globalstar for payment of such Transaction Expenses, whether or not any Stock Payments are consummated. In the event that no Stock Payments are consummated, Subcontractor agrees to refund any portion of the Work Fee that is not used to pay for Transaction Expenses.

3. Other Agreements of the Parties.

This Agreement applies only to the matters expressly set forth herein. All terms and conditions of the Forbearance Agreement, the SPA, and the Rocket Lab Agreement remain in full force and effect. Nothing in this Agreement, nor any actions taken in accordance with this Agreement, shall be construed as a waiver of, or consent to, any other existing or future defaults under the SPA or the Rocket Lab Agreement.

4. Miscellaneous. In the event of a conflict or inconsistency between this Agreement, the SPA and/or the Forbearance Agreement, as the case may be, the terms and conditions of this Agreement will prevail. The terms and conditions of Attachment 2 of the SPA shall apply to this Agreement, *mutatis mutandis*.

Acknowledged and agreed by their duly authorized representatives.

Globalstar, Inc.
By:

Name:

Date:

Macdonald, Dettwiler and Associates Corporation

By:

Name:

Date:

Rocket Lab USA, Inc.

By:

Name:

Date:

Exhibit 21.1

Subsidiaries of Globalstar, Inc.

As of December 31, 2022, the subsidiaries of Globalstar, Inc., their jurisdiction of organization and the percent of their voting securities owned by their immediate parent entity were as follows:

Subsidiary	Organized Under Laws of	% of Voting Securities Owned by Immediate Parent
GSSI, LLC	Delaware	100%
ATSS Canada, Inc.	Delaware	100%
Globalstar Brazil Holdings, L.P.	Delaware	100%
Globalstar do Brasil Holdings Ltda.	Brazil	100%
Globalstar do Brasil Ltda.	Brazil	100%
Globalstar Japan K.K.	Japan	100%
Globalstar Satellite Services Pte., Ltd	Singapore	100%
Globalstar Communications Mongolia LLC	Mongolia	100%
Globalstar Satellite Services Pty., Ltd	South Africa	70%
Globalstar C, LLC	Delaware	100%
Globalstar Leasing LLC	Delaware	100%
Globalstar Licensee LLC	Delaware	100%
Globalstar Security Services, LLC	Delaware	100%
Globalstar USA, LLC	Delaware	100%
GUSA Licensee LLC	Delaware	100%
Globalstar Canada Satellite Co.	Canada	100%
Globalstar de Venezuela, C.A.	Venezuela	100%
Globalstar Colombia, Ltda.	Colombia	100%
Globalstar Caribbean Ltd.	Cayman Islands	100%
Globalstar Republica Dominicana, S.A.	Dominican Republic	100%
GCL Licensee LLC	Delaware	100%
Globalstar Americas Acquisitions, Ltd.	British Virgin Islands	100%
Globalstar Americas Holding Ltd.	British Virgin Islands	100%
Globalstar Gateway Company S.A.	Nicaragua	100%
Globalstar Americas Telecommunications Ltd.	British Virgin Islands	100%
Globalstar Honduras S.A.	Honduras	100%
Globalstar Nicaragua S.A.	Nicaragua	100%
Globalstar de El Salvador, SA de CV	El Salvador	100%
Globalstar Panama Corp.	Panama	100%
Globalstar Guatemala S.A.	Guatemala	100%
Globalstar Belize Ltd.	Belize	100%
Astral Technologies Investment Ltd.	British Virgin Islands	100%
Astral Technologies Nicaragua S.A.	Nicaragua	100%
SPOT LLC	Colorado	100%
Globalstar Media, LLC	Louisiana	100%
Globalstar Broadband Services, Inc.	Delaware	100%

Subsidiary	Organized Under Laws of	% of Voting Securities Owned by Immediate Parent
The World's End (Pty) Ltd.	Botswana	100%
Globaltouch West Africa Limited	Nigeria	30%
Globalstar International, LLC	Delaware	100%
Globalstar Telecomunicaciones Perú S.A.C.	Peru	100%
Global Star Majan LLC	Oman	100%
Globalstar Japan, Inc.	Japan	51%
Mobile Satellite Services Australia Pty. Ltd.	Australia	100%
Globalstar (Thailand) Ltd.	Thailand	100%
GSAT NZ Limited	New Zealand	100%
Globalstar Netherlands B.V.	Netherlands	100%
Globalstar GE, SL	Equatorial Guinea	100%
Mobile Satellite Services B.V.	Netherlands	100%
Globalstar Europe, S.A.S.	France	100%
Globalstar Gabon S.A.	Gabon	100%
Globalstar Europe Satellite Services, Ltd.	Ireland	100%
Globalstar Holding US, LLC	Delaware	100%
Globalstar Slovakia, S.R.O.	Slovakia	100%
Globalstar Argentina S.R.L.	Argentina	100%
GSAT Bucharest S.R.L.	Romania	100%
Mobile Satellite Services Mexico S. de R.L. de C.V.	Mexico	100%
Globalstar Ukraine Limited Liability Company	Ukraine	100%
Globalstar Albania sh.p.k.	Albania	100%
Globalstar Communications Spain, S.L.	Spain	100%
Globalstar London Limited	United Kingdom	100%
Globalstar Cote D'Ivoire	Cote D'Ivoire	100%
Leosat Portugal, Unipessoal, LDA	Portugal	100%
Globalstar Moçamibque LDA	Mozambique	75%
Globalstar Montenegro	Montenegro	100%
Leosat Kenya Limited	Kenya	100%
Mobile Satellite Services Rwanda Ltd	Rwanda	100%
Globalstar Satellite Namibia (PTY) LTD	Namibia	70%
Globalstar Seoul Co., Ltd	South Korea	100%
Globalstar Asia Pacific	South Korea	100%
HIBLEO Nigeria Limited	Nigeria	100%

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following Registration Statements:

- Form S-3 No. 333-235726 of Globalstar, Inc.
- Form S-3 No. 333-268142 of Globalstar, Inc.
- Form S-8 No. 333-263224 of Globalstar, Inc.
- Form S-8 No. 333-235505 of Globalstar, Inc.
- Form S-8 No. 333-232178 of Globalstar, Inc.

of our reports dated March 1, 2023, with respect to the consolidated financial statements of Globalstar, Inc. and the effectiveness of internal control over financial reporting of Globalstar, Inc. included in this Annual Report (Form 10-K) of Globalstar, Inc. for the year ended December 31, 2022.

/s/ Ernst & Young LLP

New Orleans, Louisiana
March 1, 2023

Exhibit 31.1

Certification of Principal Executive Officer of Globalstar, Inc.
Pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended

I, David B. Kagan, certify that:

1. I have reviewed this annual report on Form 10-K of Globalstar, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to mak statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this rep

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respect financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. I am responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15(d)-15(e)) internal control over financial reporting (as defined in Exchange Act Rule 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 my supervisio ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to me by others within t 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 unde supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for ext 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 my conclusion about 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 re fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to mater affect, the registrant’s internal control over financial reporting; and

5. I have disclosed, based on my most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committ 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 reason 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 co over financial reporting.

Date: March 1, 2023

By: /s/ David B. Kagan
David B. Kagan
Chief Executive Officer (Principal Executive Officer)

Exhibit 31.2

Certification of Principal Financial Officer of Globalstar, Inc.
Pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended

I, Rebecca S. Clary, certify that:

1. I have reviewed this annual report on Form 10-K of Globalstar, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. I am responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15(d)-15(e)) and internal control over financial reporting (as defined in Exchange Act Rule 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 my supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to me 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 my 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 my conclusion 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. I have disclosed, based on my 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: March 1, 2023

By: /s/ Rebecca S. Clary
Rebecca S. Clary
Chief Financial Officer (Principal Financial Officer)

Exhibit 32.1

Certification of Principal Executive Officer Under Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350

Pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), the undersigned officer of Globalstar, Inc. (the “Company”), does hereby certify that:

This annual report on Form 10-K for the year ended December 31, 2022 of the Company fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 and the information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 1, 2023	By:	/s/ David B. Kagan
		David B. Kagan
		Chief Executive Officer (Principal Executive Officer)

Exhibit 32.2

Certification of Principal Financial Officer Under Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350

Pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), the undersigned officer of Globalstar, Inc. (the “Company”), does hereby certify that:

This annual report on Form 10-K for the year ended December 31, 2022 of the Company fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 and the information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

March 1, 2023	By:	/s/ Rebecca S. Clary
		Rebecca S. Clary
		Chief Financial Officer (Principal Financial Officer)