

Connect smarter

Globalstar 



Company Overview
November 2023

/ About Globalstar

Globalstar empowers its customers to connect, transmit and communicate in smarter ways – easily, quickly, securely, and affordably – offering reliable satellite and terrestrial connectivity services as an international telecom infrastructure provider.

The Company's LEO satellite constellation assures secure data transmission for connecting and protecting assets, delivering key operational data, and saving lives – from any location – for consumers, businesses, and government agencies across the globe. Globalstar's terrestrial spectrum, Band 53 and its 5G variant, n53, offers carriers, cable companies, and system integrators a versatile, fully licensed channel with a growing ecosystem to improve customer wireless connectivity, while Globalstar's XCOMP technology offers significant capacity gains in dense wireless deployments.

In addition to SPOT GPS messengers, Globalstar offers next-generation IoT hardware and software products for efficiently tracking and monitoring assets, processing smart data at the edge, and managing analytics with cloud-based telematics solutions to drive safety, productivity, and profitability.



XCOM

Globalstar has announced that Paul E. Jacobs, Ph.D., founder and CEO of XCOM Labs and former CEO and Executive Chairman of Qualcomm, has been appointed CEO of Globalstar. Dr. Jacobs also has been appointed to Globalstar's Board of Directors.

In conjunction with Dr. Jacobs' appointment, Globalstar has also entered into a strategic perpetual licensing agreement for exclusive access to certain key XCOM technologies and personnel. The license covers several XCOM's novel technologies for wireless spectrum innovations, including XCOMP, XCOM's commercially available coordinated multipoint radio system. XCOMP delivers substantial capacity gains in dense, complex, challenging wireless environments in sub 7 GHz spectrum.



Senior management team



Dr. Paul Jacobs
Chief Executive Officer



Matt Grob
Chief Technology Officer



Peter Black
Chief Scientist



Wen Doong
Sr. VP,
Engineering &
Operations



Rebecca Clary
Chief Financial Officer



Barbee Ponder
General Counsel &
Vice President of
Regulatory Affairs



Kyle Pickens
VP of Strategy



Tim Taylor
VP of Finance,
Business
Operations & Strategy



Investment highlights

1

Flagship Service Agreement announced in September bringing a communications industry changing critical wholesale service

2

Set of unique & unreplicable satellite assets & worldwide spectrum authorizations in multiple favorable bands

3

Globalstar expects that its wholesale business strategy will allow it to generate reliable cash flow with substantial growth potential & increased profitability

4

Globalstar views its U.S. terrestrial spectrum as its single most valuable asset, & ultimately its international terrestrial spectrum may have a value in excess of its U.S. terrestrial spectrum. Globalstar has terrestrial licenses in ten countries covering a population of approximately ~750mm

5

Core MSS business operating for 20 years & generating >\$100mm revenue annually

6

Over 20 years of technical & operational experience, as well as a proven history of working with regulatory bodies. Launched first & second-generation LEO satellites between 1999-2013. Currently constructing 17 new satellites, expected to be launched in 2025. In 2023, upgraded ground stations to enhance two-way FLA capabilities.



Globalstar: next-generation
international telecommunications
infrastructure provider and
technology disruptor



Benefits of Globalstar's satellite system

Mid-band spectrum for mobility

Available system capacity is retained 15% to support IoT growth

Allows for small, lower cost and energy efficient terminals

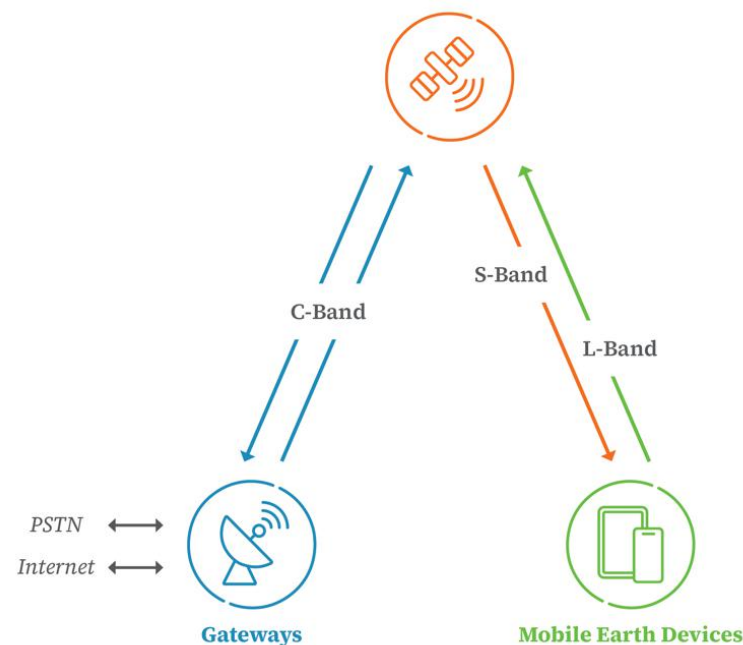
Bent pipe architecture allows for on ground upgrades

Satellite coverage across ~99% of world's population

Low-latency and high-quality transmissions

2022 satellite procurement agreement with MDA to ensure continuity of service

Our network in action



Licensed MSS Spectrum

L-Band:
8.725 MHz ⁽¹⁾

S-Band:
16.5 MHz

C-Band:
339 MHz

⁽¹⁾ 0.95 MHz shared with Iridium Satellite Communications



Global footprint & ground infrastructure

Globalstar International Terrestrial Status

■ Terrestrial Authority Obtained

Terrestrial authority in U.S., Canada, Spain & Brazil is 11.5 MHz. Authority over South Africa, Botswana, Rwanda, Gabon, Mozambique, Kenya, & Namibia is 16.5 MHz

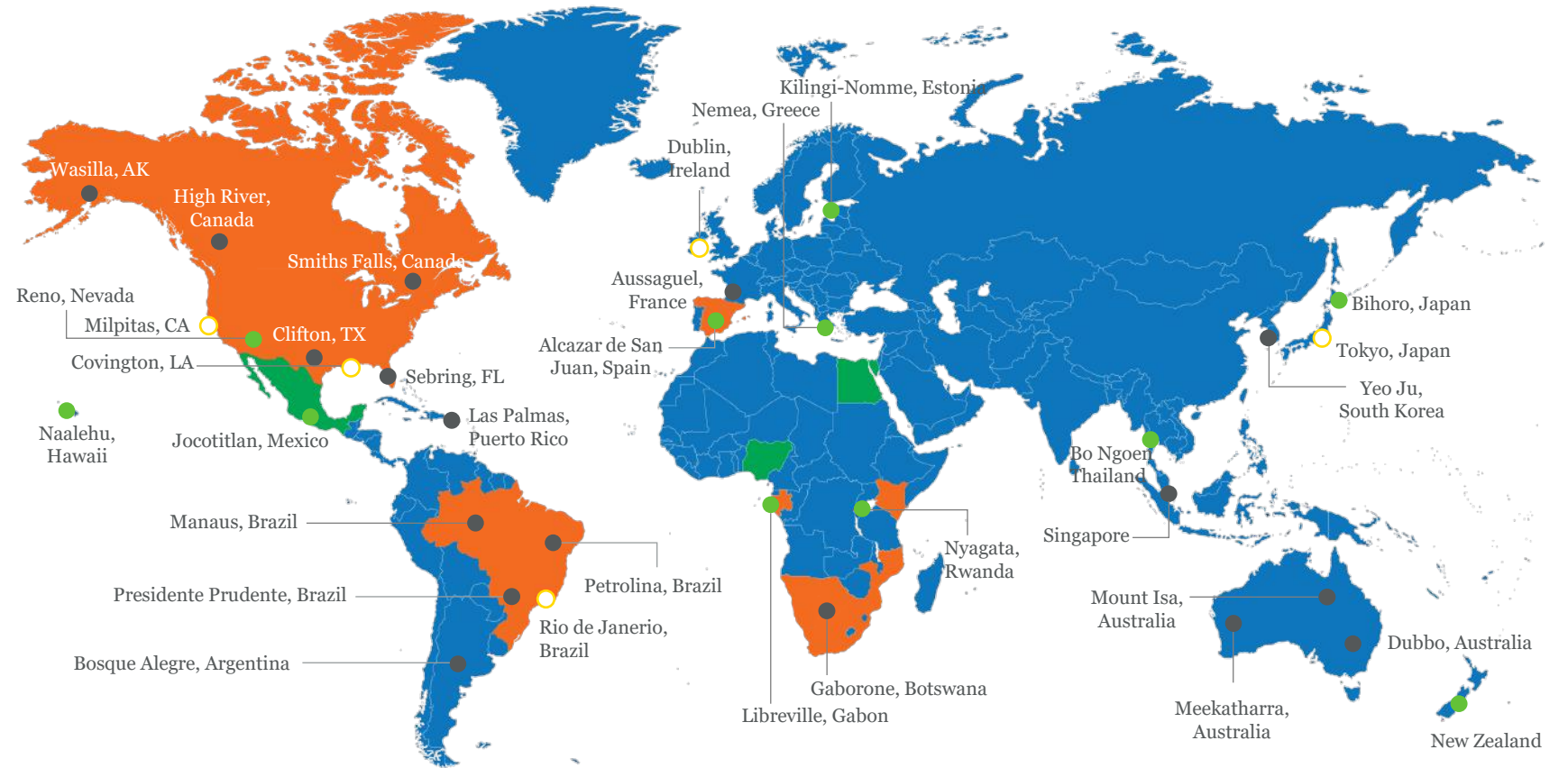
Globalstar Ground Stations

● Upgraded Existing Gateway

● Newly Added Gateway

○ Office Locations

Globalstar has an established global ground infrastructure including gateways, an interconnected backbone network, as well as cloud-based data hosting & processing facilities



Four pillars of value

Our value creation strategy to drive value is divided into four pillars, the foundation for a telecom infrastructure company offering satellite and terrestrial connectivity around the globe.

1

Wholesale satellite
capacity

2

Terrestrial wireless

3

Commercial IoT

4

Legacy services



Wholesale satellite capacity

Globalstar expects to continue to develop wholesale customer opportunities using its available satellite capacity for IoT and other strategic initiatives.



Retained satellite capacity

Globalstar's retained satellite capacity can support its existing and future customers, while allowing an approximately fifty-fold increase in its own subscriber base (depending on composition of active terminals) following recent and planned investments in the Company's space and ground segments. The available capacity can be used by Globalstar directly or through additional wholesale arrangements.

*Utilization of Capacity
Today*



~50X

*Potential Utilization of Capacity
Tomorrow*



Terrestrial wireless

Band n53 is a uniform and increasingly “borderless” spectrum resource. Globalstar can monetize Band n53 across multiple commercial applications, which its partners, including cable companies, legacy or upstart wireless carriers, system integrators, utilities and other infrastructure operators, will be able to access through a growing device ecosystem, while Globalstar’s XCOMP technology offers significant capacity gains in dense wireless deployments.



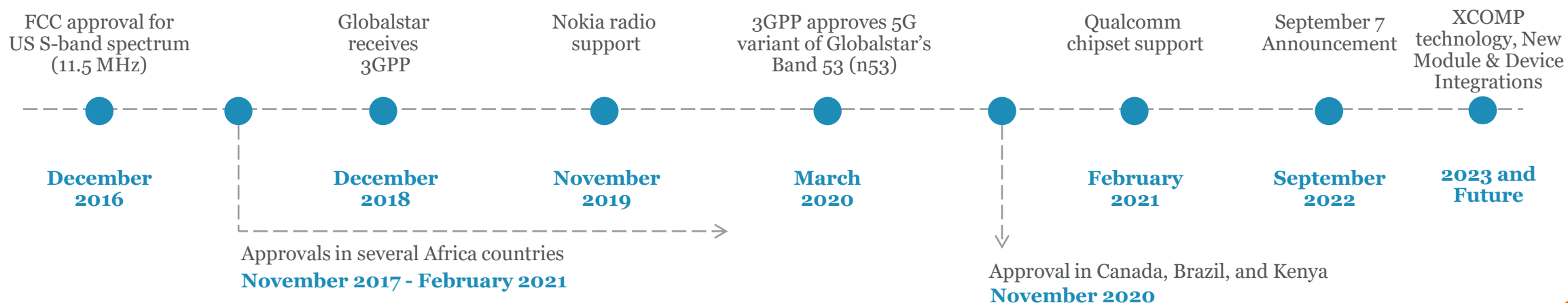
3GPP Band 53 (S-Band) spectrum detail

5G applications will drive material growth in mobile data usage. Keeping pace with network bandwidth demands and high service quality requires more mid-band licensed spectrum.

Technical

- Utilizes TD-LTE eliminating the need for paired spectrum
- Broad device and infrastructure ecosystem with existing chipset architectures
- Potential for harmonized terrestrial authority across many international regulatory domains
- No build out requirements given existing satellite service
- No sharing obligations
- Globalstar has licensed XCOM Labs' technology to enhance Globalstar's terrestrial wireless business, accelerating and expanding its ability to develop commercial applications and enter a broader range of end markets

Terrestrial Spectrum Process



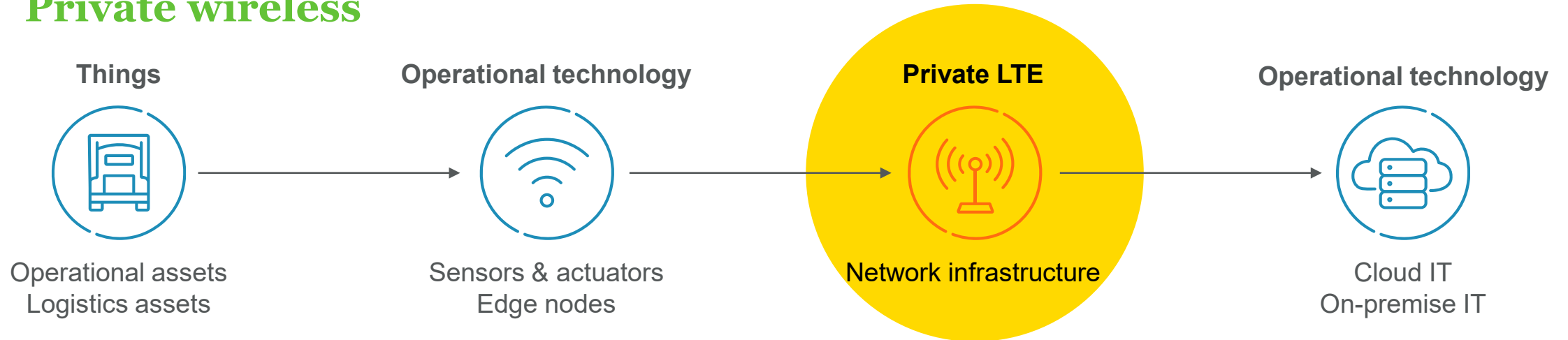
Band 53 ecosystem

Globalstar has developed an impressive and growing list of companies helping to drive Band 53 towards commercialization.



Terrestrial wireless opportunities

Private wireless



- Secure proprietary wireless networks tailored for enterprise, transportation, or proprietary wireless networks tailored for enterprise, transportation, or government use cases
- Band 53 represents a rare swath of global licensed satellite spectrum (convertible to terrestrial spectrum) not controlled by wireless operators
- Globalstar's XCOMP technology offers significant capacity gains in dense wireless deployments.



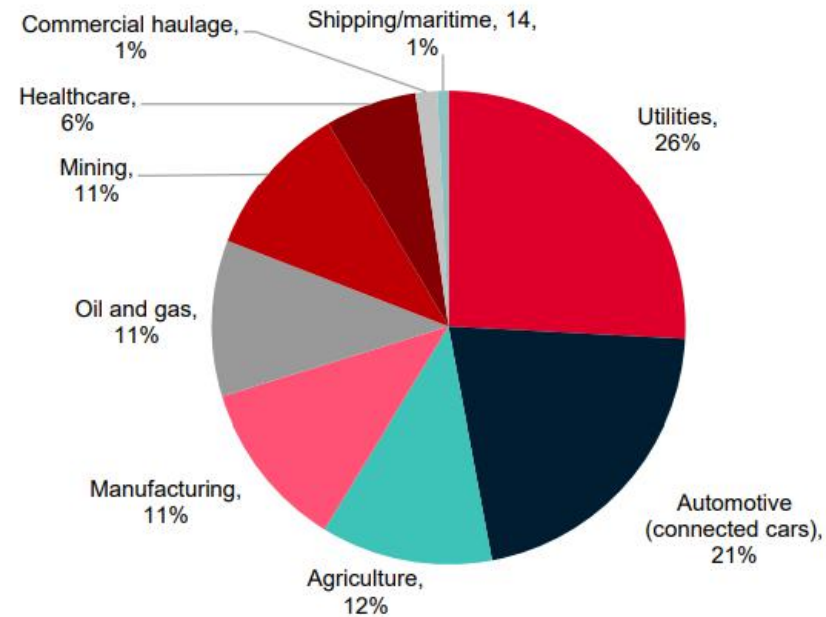
Commercial IoT

Globalstar is developing IoT initiatives that take advantage of satellite and terrestrial wireless technologies and will introduce two-way modules and NTN standardization to meet the growing direct-to-device connectivity demands across several sectors and use cases.



Direct-to-Device Satellite IoT NTN Market

Figure 7: 1.9 billion devices (8% of the IoT market) across nine sectors are addressable for D2D satellite by 2035



Note: Percentages represent the share of total IoT devices addressable for D2D satellite in 2035. Note this is not the same as the share of total addressable revenue.

Source: GSMA Intelligence

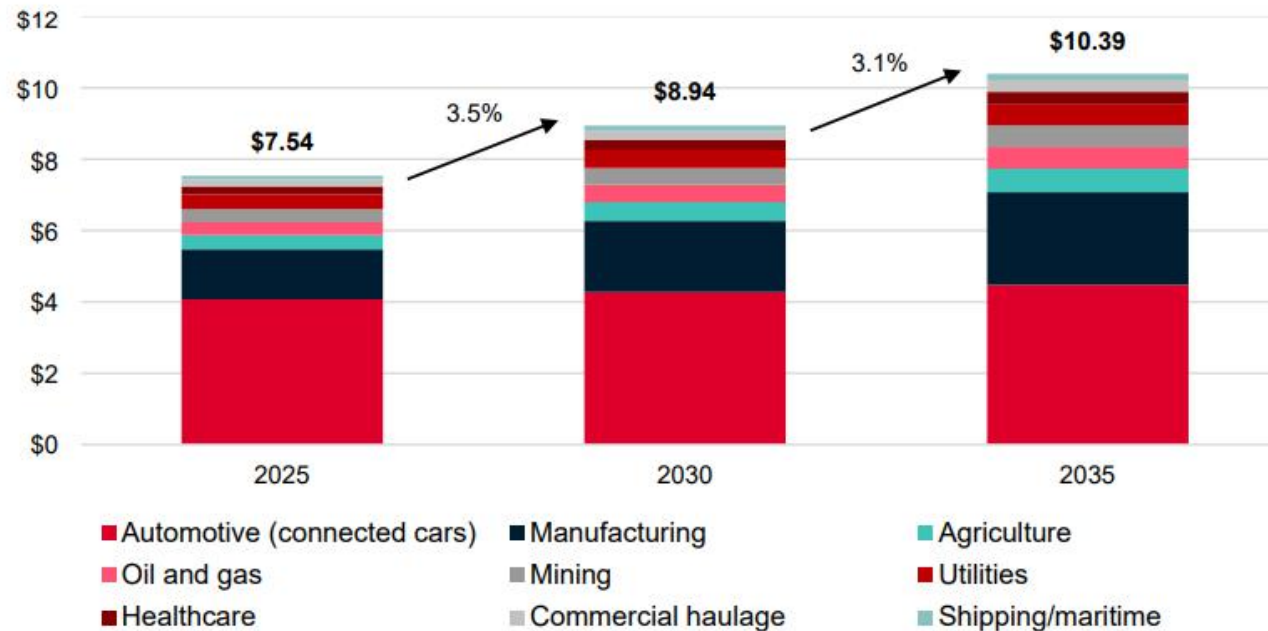
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Direct-to-Device Satellite IoT NTN Market

Figure 8: D2D satellite IoT addressable revenues will reach \$10.4 billion by 2035, mainly due to connected cars

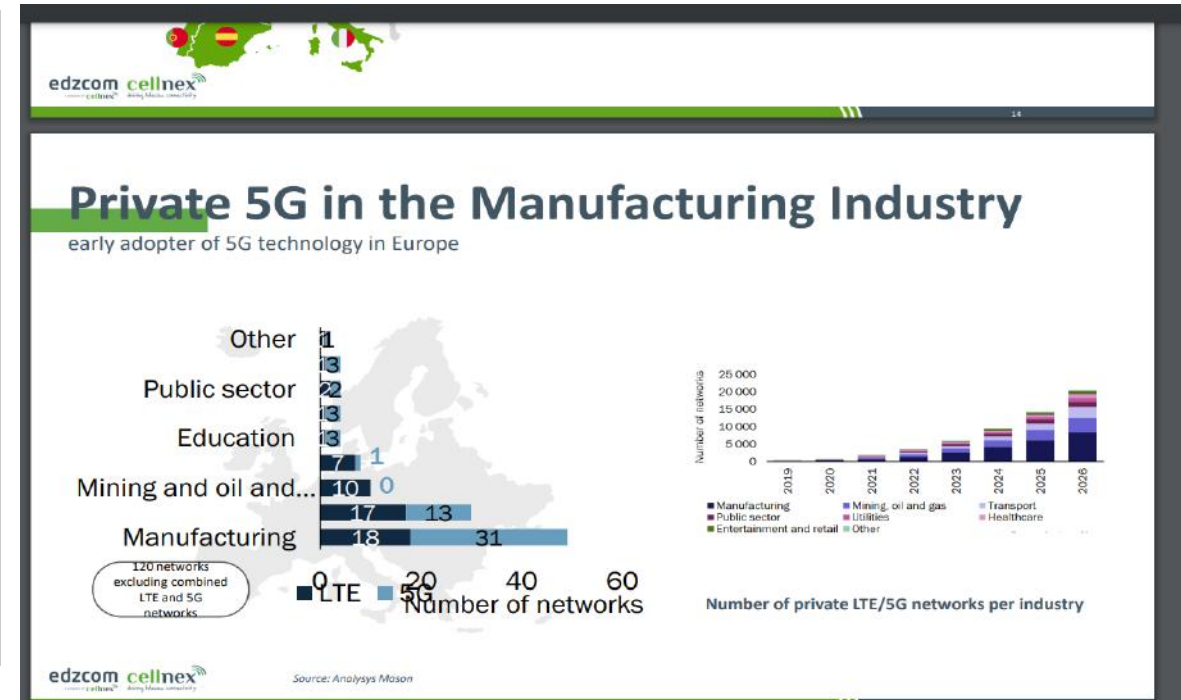
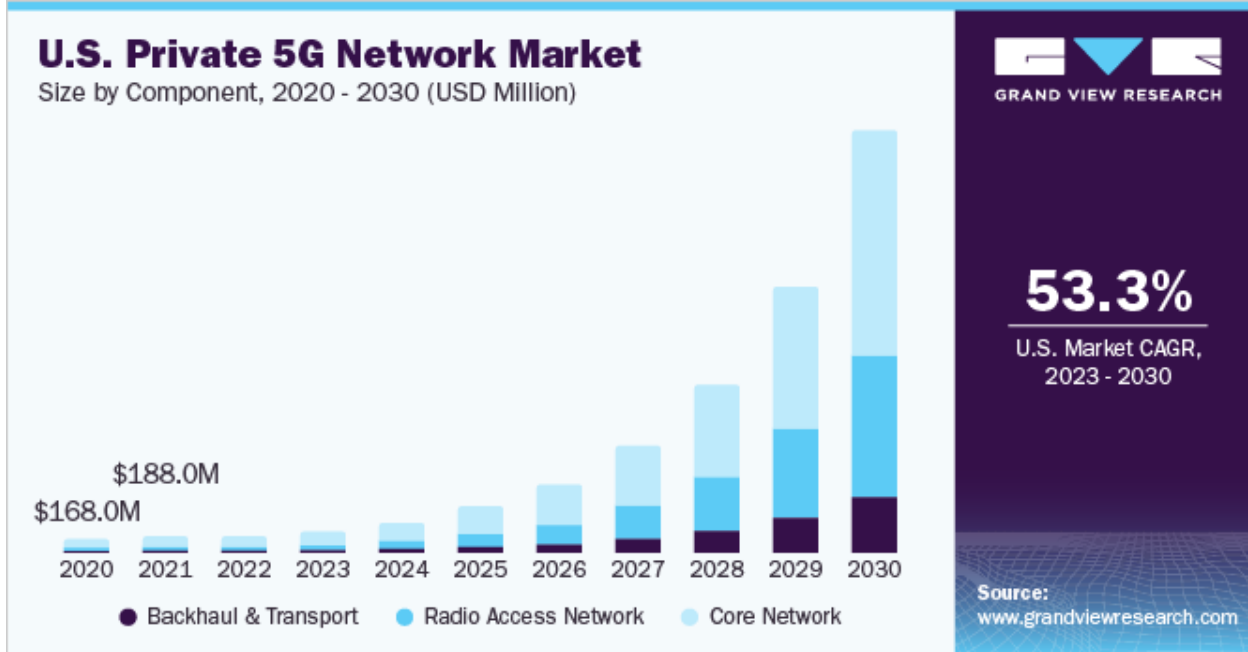
Revenue (billion per year)



<https://data.gsmaintelligence.com/api-web/v2/research-file-download?id=69042417&file=220322-Satellite-2.0-going-direct-to-device.pdf>




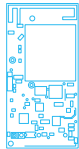
Private 5G Market



Report Attribute	Details
Market size value in 2023	USD 2.00 billion
Revenue forecast in 2030	USD 36.08 billion
Growth Rate	CAGR of 51.2% from 2023 to 2030



Commercial IoT products

STX-3	SmartOne C	SmartOne Solar	ST100	ST150	2-way multimode module and modem
					
<ul style="list-style-type: none"> • Company's smallest M2M satellite transmitter • Integrated by VARs and OEMs into M2M solutions 	<ul style="list-style-type: none"> • Tracking of assets • Line powered or battery powered • Utilizes motion sensors and GPS to gather and transmit telemetry data 	<ul style="list-style-type: none"> • Tracking of assets • Solar power recharges batteries providing 8+ years of usable service • Bluetooth capabilities for indoor tracking • ATEX and Intrinsically Safe certifications 	<ul style="list-style-type: none"> • Launched in 2020 • Latest satellite transmitter designed for rapid development by 3rd party companies • Low costs, reliable, complete one-way data module • Battery and solar connections • Bluetooth technology 	<ul style="list-style-type: none"> • Recently commenced production for both module and finished product form factors • Partner-friendly apps and edge computing capabilities • Board development refreshed from ground up 	<ul style="list-style-type: none"> • Currently under development, expected launch in 2024. Competitively positioned in all product specifications • Ability to track and control assets • Large established existing market

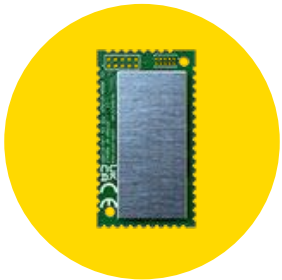


Realm Edge solutions – devices & modules

Globalstar has brought its decades-long heritage of innovation to deliver a complete edge-to-endpoint solution. We call it the **Realm Enablement Suite**. For asset tracking and telematics applications that generate smart data at the edge and deliver with reliability over satellite, Realm transforms the value chain from the ground up to slash development time, get innovations to market faster and create capabilities beyond expectations.












The **Integrity 150** is a next-generation, solar-powered data transmitter and asset tracker that interfaces with industry-standard sensors over Bluetooth and delivers Smart Data from the edge. Users can quickly program AI-enabled applications and computing solutions using the Edge Application Platform to process location and sensor data at the edge for low-cost Smart Data transmission. In addition, it delivers zero-maintenance ownership with the longest-lasting battery (10+ years) and shelf life available. With its low-power design built for the world's most challenging environments, the Integrity 150 reliably delivers secure data and location reporting with unprecedented payload options.



The **ST150M** satellite modem module can be quickly and effectively integrated into technology to develop unlimited applications for a range of markets. Like the Integrity 150, the modem leverages industry-leading BLE5, Nordic C, and comprehensive unified APIs, empowering rapid development and customization of firmware for more advanced smart data applications and enabling AI at the edge. An ST150 Dev Kit provides an ST150M module on a dev board with satellite and GPS patch antennas, all mounted on an Arduino Shield, to develop and test technology designs before committing them to hardware.



Key IoT verticals

Vertical	Illustrative Use Cases		Key Partners
 <p>Connected Oil Field</p>	<ul style="list-style-type: none"> Tracking location of various field assets Tank level monitoring Leak detection and pipeline integrity 	<ul style="list-style-type: none"> Remote monitoring of pumps & compression equipment Flow, pressure and temperature monitoring at the well head Safety & ELD compliance in Oil Field Services 	 
 <p>Utilities / Smart Grid</p>	<ul style="list-style-type: none"> Remote monitoring of renewable generation assets Remote monitoring of propane tank levels Connectivity for smart meters 	<ul style="list-style-type: none"> Leak detection and pipeline integrity for gas utilities Fleet management for utility companies 	
 <p>Connected Agriculture</p>	<ul style="list-style-type: none"> Monitoring remote equipment for irrigation, feeding /watering and security Monitoring animal location and health 	<ul style="list-style-type: none"> Remote farm equipment telematics, location monitoring and geofencing 	 <i>Find My Sheep</i>
 <p>Fleet Management & Telematics</p>	<ul style="list-style-type: none"> Location tracking / geofencing Remote monitoring of engine run time, fuel levels, oil life, engine alarms and excessive vibration 	<ul style="list-style-type: none"> Predictive maintenance 	



Legacy services

Globalstar is committed to its legacy satellite business and serving its current subscriber base while offering future innovations in MSS. Existing Duplex and SPOT customers are expected to benefit from expanded capacity through additional ground infrastructure and satellites which improve service levels.



/ Legacy products

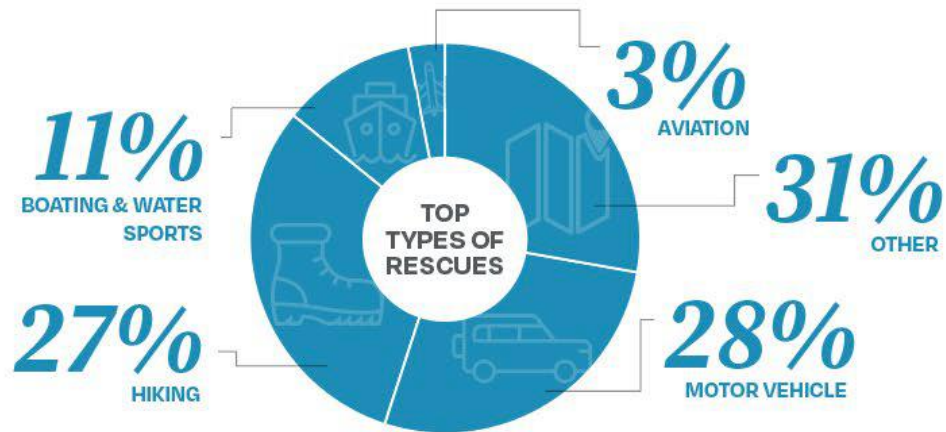
Consumer / SPOT			Voice & Data / Duplex
SPOT Trace	SPOT X	SPOT Gen4	GSP-1700
			
<ul style="list-style-type: none"> • Tracking of assets beyond terrestrial coverage • Anti-theft device • Quick, easy, and inexpensive attachment to assets for both commercial and consumer applications 	<ul style="list-style-type: none"> • Two-way messaging with SPOT tracking and emergency capabilities • Keyboard functionality • Send and receive SMS • Only fully integrated (single device) two-way messaging device on market • Bluetooth technology • Available in Jeep special edition device 	<ul style="list-style-type: none"> • Next generation SPOT Satellite GPS Messenger • More tracking features with enhanced mapping interface • Improved product specs for water resistance • Available in Jeep special edition device 	<ul style="list-style-type: none"> • Full voice / data capabilities • GSP-1700 -commercial / government market • Highest quality voice service



Legacy products

Globalstar is an innovator and leader in life-saving emergency rescue products and services, **including its SPOT line of products which connect people and assets in remote locations around the globe.**

Since introduced in 2007, SPOT has been used to initiate:



9,500+
Rescues and Counting

Top Countries for Rescues:



/ Contact us

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investorrelations@globalstar.com

