

LEO Economy FAQs

What is LEO (Low-Earth Orbit)?

Low-Earth orbit (often known as LEO) encompasses Earth-centered orbits with an altitude of 2,000 km (1,200 mi) or less. For the purposes of the [Commercial Use Policy](#), low-Earth orbit is considered the area in Earth orbit near enough to Earth for convenient transportation, communication, observation and resupply. This is the area where the International Space Station currently orbits and where many proposed future platforms will be located.

What is the LEO Economy?

The LEO economy is the production, distribution, and trade of goods and services within low-Earth orbit. As technology progresses, this economic space will grow to include more groups (including but not limited to governmental, commercial, and academic) that will contribute to the LEO economy's continued expansion and support future sustainable space enterprises.

Why is it important?

Space is a growing industry and low-Earth orbit is full of opportunity. Establishing a robust LEO economy in which many groups on Earth can participate benefits American industry, promotes technological discovery, and increases [benefits for humanity](#) that are discovered or advanced through in-space work and research. Once a thriving economy in low-Earth orbit has been established, NASA can purchase services as one of many customers. This should enable the agency to focus its resources on landing the first woman and first person of color on the moon.

Who is involved?

NASA has partnered with commercial groups throughout the history of spaceflight through [commercial resupply missions](#), [commercial crew activities](#), the growing list of companies that own, market, and operate their capabilities on the ISS, and the research and development done by the [ISS National Lab](#). Now, as NASA focuses full speed ahead on its goal of landing the first woman and first person of color on the moon, American companies will play an essential role in establishing a sustainable presence in space.

How can I get involved?

- [Take our quiz](#) to see if your idea, activity or project qualifies for new opportunities on the International Space Station. Or jump to our [Commercial Use and Pricing Policy FAQs](#).
- If you dream of going to space, learn more about [Private Astronaut Missions](#). Or jump to our [Private Astronaut FAQs](#).

Where can I learn about the International Space Station Transition Plan?

Learn more here: [FAQ: The International Space Station 2022 Transition Plan | NASA](#)

Commercial Use and Pricing Policy FAQs

[Click here](#) to view the [NASA Interim Directive \(NID\) 8600.121: Use of International Space Station \(ISS\) for Commercial and Marketing Activities in its entirety](#).

Why is NASA interested in commercializing low-Earth orbit (LEO)?

The commercialization of LEO is the next step in humanity's exploration and expansion into the solar system. Low-Earth orbit provides an ideal environment for crew training, research, and hardware testing for exploration use. The ISS has pioneered this domain, and post-ISS, NASA will always have a need for access to a human-rated destination in LEO. NASA intends to be a significant customer of post-ISS services in LEO, as outlined in [Forecasting Future NASA Demand in Low-Earth Orbit: Revision Two – Quantifying Demand](#). In order to support the development of future commercial destinations and services, NASA is increasing access to the substantial resources and infrastructure of the ISS to assist the commercial sector in developing and deploying new capabilities in LEO. Both the Congress and the National Space Council have declared that it is in the national and economic security interests of the United States to encourage the development of a healthy and robust commercial sector in LEO.

Are Crewmembers allowed to perform commercial and marketing activities?

Yes. Approved Commercial and marketing activities consistent with NASA's policy are allowed under the [Code of Conduct for the International Space Station Crew](#). This is because those activities are considered ISS duties. The Code of Conduct for the International Space Station Crew states "ISS crewmembers shall refrain from any use of the position of ISS crewmember that is motivated, or has the appearance of being motivated, by private gain, including financial gain, for himself or herself or other persons or entities. Performance of ISS duties shall not be considered to be motivated by private gain." Accordingly, commercial and marketing activities supported under an authorized written agreement with NASA, and coordinated and scheduled through established crew assignment processes, are not—for purposes of the Code of Conduct for the International Space Station Crew—considered motivated by private gain. U.S. Government astronauts are additionally subject to U.S. Government ethics requirements, which impose additional restrictions on U.S. Government astronaut crewmembers.

Do U.S. Government Ethics requirements impact the ability of U.S. astronauts to support commercial entities under NASA's policy?

Yes. U.S. Government ethics requirements, including but not limited to the prohibition on endorsing products, services or enterprises, will continue to apply to U.S. Government astronauts at all times. Accordingly, in order to be approved, U.S. Government astronaut support of marketing activity must take place behind the scenes without being able to recognize the U.S. Government astronaut in public photos or other media. NASA ethics officials will provide ethics advice and counsel on the application of Federal ethics provisions in conjunction with NASA's coordination. Also, NASA's written agreement with partner entities will prohibit the use of information about or depiction of U.S. astronauts in a manner contrary to U.S. Government ethics rules.

What are the media guidelines? What are the advertising guidelines?

NASA provides [guidelines for the use of media](#), with specific regulations for NASA content used for [commercial and marketing activities](#).

Why can't a Private Astronaut perform voluntary services for NASA? Can they participate in downlinks or talk to schools?

Under the law, a government agency is not allowed to accept voluntary services from an individual or entity. That means that a Private Astronaut who is on the space station for the purpose of commercial and marketing activities cannot perform activities for the direct benefit of NASA. If a Private Astronaut meets training and other requirements, that person can certainly provide direct support to NASA under an alternate arrangement. A Private Astronaut can always engage in downlink or other outreach opportunities in his or her personal capacity or on behalf of their employer.

How much does it cost?

NASA has released a [commercial and marketing pricing policy](#) to address this question. These rates offer interested companies a way to plan their business models and activities as NASA moves towards a more commercial mode of operation. The June 2019 pricing policy was retired on December 31, 2020. Proposals received on or after January 1, 2021, are subjected to the pricing policy updated February 25, 2021.

Is there a minimum amount of crew time resources I have to schedule?

Yes. A minimum amount of time will be required depending on the task, but crew time must be scheduled in 15-minute blocks of time.

Why can't I re-sell resources that I acquire? What does that mean for my business?

NASA will not allow re-selling of resources. Your signed agreement with NASA to purchase resources governs the use and application of the resources.

What on-orbit activities count against my purchased crew time?

All on-orbit crew time expended in support of your activities counts against your purchased crew time. This includes onboard training, set up, operations, tear down, etc. Crew time to transfer any related hardware from a visiting cargo vehicle to its stowage location on the space station does not count against purchased crew time.

What happens to Intellectual Property (IP) generated during LEO activities?

The allocation of rights in inventions and data depends on the terms of any applicable agreements or contracts. Typically, under NASA contracts and agreements, contractors and partners have the right to retain, or obtain, ownership of inventions they develop under their contract or agreement. Under most procurement contracts, NASA is required to retain a government-purpose license in inventions and data created under the contracts. Allocation of rights under partnership agreements are more flexible. In general, NASA's partners are not restricted in their use and distribution of data they first produce in the performance of an agreement, or data first produced by NASA under a collaborative or reimbursable agreement.

To facilitate the commercial development of critical technologies needed for human space exploration, NASA takes steps to ensure that its contractors and partners retain the maximum rights permitted by law, unless NASA has identified a specific need for it to obtain rights in intellectual property for its own purposes as part of an agreement. It is part of NASA's mission to "seek and encourage the fullest commercial use of space," so it is NASA's interest to ensure that its contractors and partners are able to leverage investment to advance commercial space activities.

What are march-in rights?

The Bayh-Dole Act provides Federal Agencies with "march-in rights." (see, 35 U.S.C. § 203). March-in rights allow the government to require the contractor (or patent assignee) to grant a reasonable "nonexclusive, partially exclusive, or exclusive license" to a "responsible applicant or applicants," if certain specific circumstances exist (e.g., health or safety concerns, lack of practical application, etc.). The foundation of the Bayh-Dole Act supports the principle that inventions resulting from federally funded research should benefit the American people by the development of the inventions into commercially available products and services by achieving practical application of the invention that benefits the public. Should the patent owner refuse to grant the license, then the Government can grant the license itself.

Does the government always retain march-in rights?

Yes, if the Bayh-Dole Act applies, as these rights are statutorily granted pursuant to this act (35 U.S.C. § 203). However, NASA knows of no instances within the over 38-year old history of the Bayh-Dole Act when these march-in rights were ever exercised by any Federal Agency.

What can the government utilize intellectual property for under a government purpose license?

While there is no one specific definition defining the scope of a "government purpose license," a typical license grant in regard to an invention (or similarly for data), might state: "...the Government shall have a *nonexclusive, nontransferable, irrevocable, paid-up license to practice, or have practiced for or on its behalf, the subject invention throughout the world.*" (FAR 52.227-11, Patent Rights- Ownership by the Contractor.) This is read to mean that the Government may practice the invention itself, or the Government may permit another to practice it on its behalf (i.e., for the purpose of benefitting the Government).

Private astronaut mission FAQs

Who is considered an ISS crew member?

Anyone who is on the International Space Station (ISS), including NASA astronauts, International Partner astronauts, or private astronauts.

What is a private astronaut mission?

A private astronaut mission is a privately-funded, dedicated commercial flight to the International Space Station (ISS) whereby approved commercial activities can be conducted by private astronauts on the space station. These private missions must use U.S. transportation vehicles that meet NASA's ISS visiting vehicle requirements and will normally be of short duration, less than 30 days. The private astronaut mission sponsor is responsible for selecting the crew and ensuring they meet NASA's medical standards and certification procedures for International Space Station crew consistent with their role on the mission.

Who selects the crew for a private astronaut mission?

The private astronaut mission provider is responsible for selecting the crew and ensuring they meet NASA's medical standards and certification procedures for the International Space Station crew consistent with their role on the mission (i.e. Professional astronaut vs tourist).

What kinds of activities will private astronauts perform on the space station?

Activities performed on the space station will be dependent on the level of training of the private astronaut and the agreements in place. A private astronaut assigned to a mission on the space station will have the ability to fill duties that fall into the approved commercial and marketing activities outlined in the NASA Interim Directive, including certain promotional capabilities that meet the requirements of the U.S. Government, and routine operations of the space station.

What requirements must private astronauts meet?

Private astronauts will have to meet FAA regulatory requirements, which include liability waivers, insurance, and indemnification during launch and reentry activities.

What support will NASA provide to private astronauts?

NASA will perform space station mission integration for all private astronauts to ensure the safety and efficiency of operations onboard. Additional support will be provided on a mission-specific basis depending on private astronaut mission provider needs and requests. This support may include, but is not limited to, cargo launch and return, on-orbit ambient and conditioned stowage, crew time, life support services, crew support consumables (e.g. food, crew provisions, medical

kits), exercise equipment, power, camera/video use, and data downlink.

What is the cost of supporting Private Astronauts and what will NASA charge the private astronaut mission provider?

The total cost of the NASA services provided will vary by mission and be paid for by the private astronaut mission provider. The value of the individual services (e.g. crew time, cargo return, on-orbit stowage) will be determined in conjunction with the goals and requirements of the private astronaut mission. Prices will be consistent with the published [pricing policy](#) for the services requested.

What kind of agreement will NASA have with a private astronaut mission provider?

Depending upon the goals and requirements proposed for a particular mission, and the entity providing resources or services, private astronaut mission providers may operate on the space station pursuant to a Federal Acquisition Regulation (FAR)-based contract, a space act agreement, and/or other arrangement as deemed appropriate under the circumstances.

How many private astronaut missions to the space station can be supported?

NASA anticipates supporting up to two short-duration (less than 30 days each) missions with private astronaut missions per year, dependent on visiting spacecraft traffic planning constraints and the health and performance of space station systems. U.S. companies responding to the fourth focus area of the [NASA Research Announcement](#) will include the number of crew members for the mission and its duration as part of their proposal. NASA will evaluate the proposed mission feasibility when it is proposed.

What scheduling opportunities will Private Astronaut Missions have for flights to the space station?

NASA will identify candidate private astronaut mission schedule windows. Private Astronaut Mission scheduling availability will be subject to overall integrated space station operations schedule, and is also subject to move given vehicle traffic changes, anomalies, or other unforeseen circumstances.

How can I become a private astronaut?

Regardless of background, whether for professional or personal reasons, anyone interested in becoming a private astronaut must make an arrangement through a U.S. entity that has an agreement with NASA to conduct a private astronaut mission.

Did we miss something? Contact us at HQ-LEO-Economy@mail.nasa.gov

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Editor: Darcy Elburn

Tags: [Commercial Space](#), [Humans in Space](#), [International Space Station \(ISS\)](#), [Low-Earth Orbit Economy](#)

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National Aeronautics and Space Administration
Page Last Updated: Feb 19, 2022
NASA Official: Brian Dunbar

The logo for AST SpaceMobile. 'AST' is in a large, white, bold, sans-serif font. 'SpaceMobile' is in a smaller, orange, bold, sans-serif font. The background is a dark blue space with a bright orange arc of light curving across the top right.

AST SpaceMobile

Transforming how
the world connects



NASDAQ: ASTS

Investor Presentation

August 2022

Forward Looking Statements

The information in this presentation and the oral statements made in connection therewith includes “forward-looking statements” for the purposes of federal securities laws that are not historical facts and involve risks and uncertainties that could cause actual results to differ materially from those expected and projected. All statements, other than statements of historical fact in this presentation and the oral statements made in connection therewith regarding AST SpaceMobile, Inc.’s, collectively with its subsidiaries (“SpaceMobile” or the “Company”), financial position, business strategy and the plans and objectives of management for future operations, are forward-looking statements. Words such as “expect,” “believe,” “anticipate,” “intend,” “estimate,” “seek” and variations and similar words and expressions are intended to identify such forward-looking statements. Such forward-looking statements relate to future events or future performance, but reflect management’s current beliefs, based on information currently available. A number of factors could cause actual events, performance or results to differ materially from the events, performance and results discussed in the forward-looking statements. For information identifying important factors that could cause actual results to differ materially from those anticipated in the forward-looking statements, please refer to the Risk Factors contained in AST SpaceMobile’s Annual Report on Form 10-K, filed with the SEC on March 31, 2022. The Company’s securities filings can be accessed on the EDGAR section of the SEC’s website at www.sec.gov. Except as expressly required by applicable securities law, the Company disclaims any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise.

Use of Non-GAAP Financial Measures

Adjusted operating expense is an alternative financial measure used by management to evaluate our operating performance as a supplement to our most directly comparable U.S. GAAP financial measure. We define Adjusted operating expense as Total operating expenses adjusted to exclude amounts of stock-based compensation expense and depreciation and amortization expense. We believe Adjusted operating expenses is a useful measure across time in evaluating the Company’s operating performance as we use Adjusted operating expenses to manage the business, including in preparing our annual operating budget and financial projections. Adjusted operating expense is a non-GAAP financial measure that has no standardized meaning prescribed by U.S. GAAP, and therefore has limits in its usefulness to investors. Because of the non-standardized definition, it may not be comparable to the calculation of similar measures of other companies and are presented solely to provide investors with useful information to more fully understand how management assesses performance. This measure is not, and should not be viewed as, a substitute for its most directly comparable GAAP measure of Total operating expenses.

Industry and Market Data

This presentation includes market data and other statistical information from sources believed to be reliable, including independent industry publications, governmental publications or other published independent sources. Although AST SpaceMobile believes these sources are reliable, we have not independently verified the information and cannot guarantee its accuracy and completeness.

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SpaceMobile will connect directly to mobile phones

Building the first and only space-based cellular broadband network



Giant total addressable market
Global wireless services market generates over \$1.1 trillion in annual revenue via 5.3 billion mobile phones and devices



Revolutionary tech, over 2,400 patent & patent-pending claims and first-mover advantage ²
Technology designed to deliver broadband from space to unmodified mobile devices, providing a one-of-a-kind service to fill cellular coverage gaps



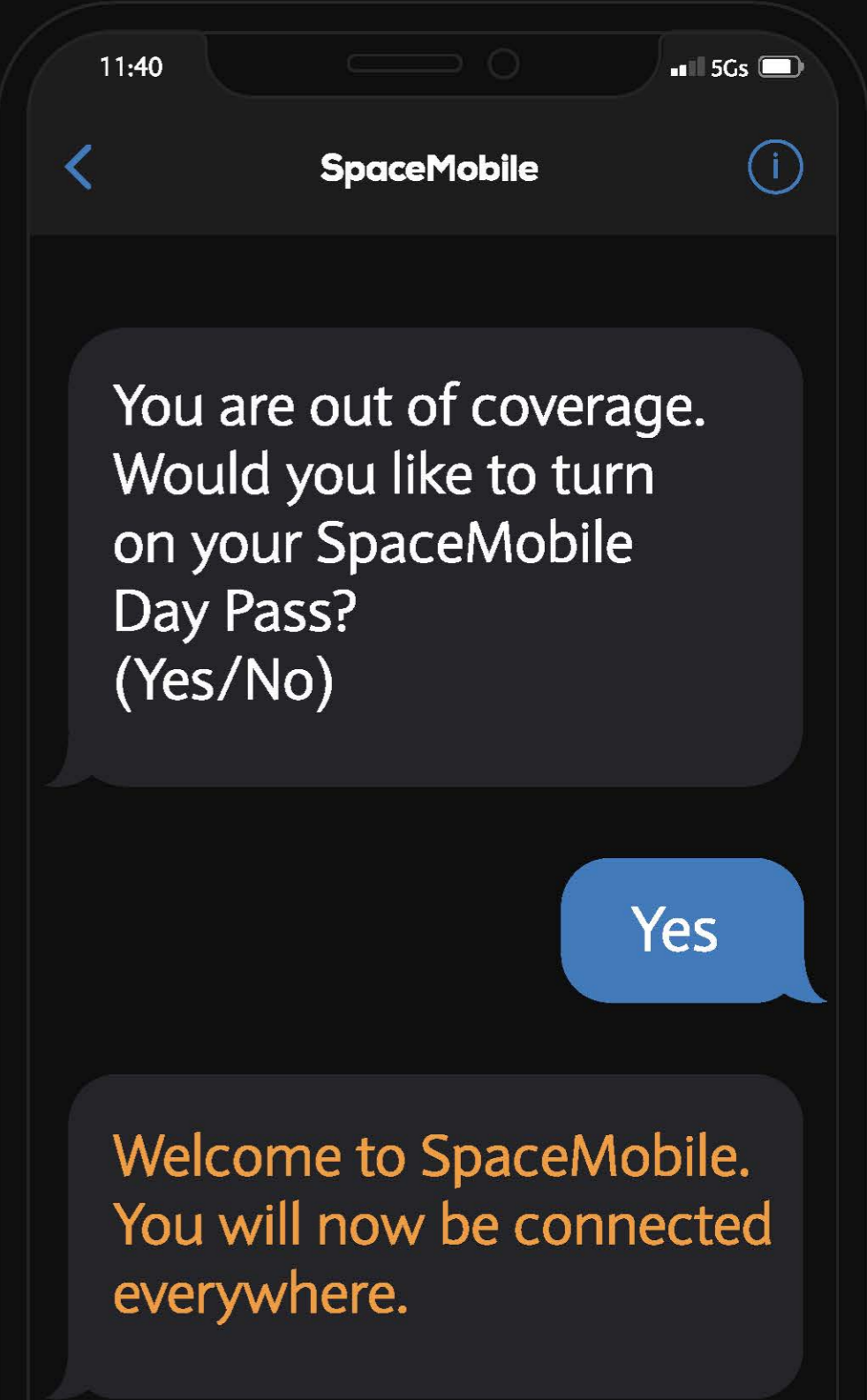
Industry-leading strategic partners
Investment, development and commercial relationships with Vodafone, American Tower, Rakuten and others



Built-in customer base ready to be turned on
When operational, SpaceMobile service will be available to our MNO customers, a growing list of leading companies that have over 1.8 billion existing subscribers ¹



Flexible, scalable, super-wholesale business model
The SpaceMobile network is designed to provide easy sign-up for existing MNO subscribers under revenue share agreements






Source: GSMA Intelligence (data as of 12/31/2021).
1. Metric defined as number of subscribers represented by mobile network operators who have agreements and understandings with AST SpaceMobile as of 3/31/2022.
2. As of 8/15/2022.

AST SpaceMobile technology solution

Differentiated approach compared to existing space-based communications

1. Market size based on the sum of 2020A revenues of included providers, AST SpaceMobile market size based on GSMA estimate of total cellular wireless market spend.

	First & Only Broadband Direct To Mobile Phones	Direct via Proprietary Mobile Phones	Indirect via Complex, Expensive Hardware
			
	Any standard mobile phone	Provider-specific satphones (~\$1K)	Provider-specific antennas mounted on planes, ships, vehicles, buildings (~\$1K-\$200K+)
End Users	Mass market mobility and the unconnected	Narrowband service on satphones	Enterprise, Maritime, Aviation, Government, Residential
Market Size ¹	> \$1 trillion	< \$2 billion	< \$20 billion

Company snapshot

Founder-led leadership and deep team with decades of successful execution

Global Infrastructure



Midland HQ /
Manufacturing Facilities

Maryland Satellite Operations and
Network Operations Center /
Space Assembly Lab

Israel
RF/Hardware
Design

Spain
Mechanical
Design

Lithuania
Prototyping/
Support

United Kingdom
Manufacturing/
Support



Abel Avellan
Chairman and CEO

- 25+ years space industry experience
- Co-inventor of 18 U.S. Patents
- Former Founder and CEO of EMC (Emerging Markets Comms.) until \$550mm sale in 2016
- Provided initial seed capital for AST SpaceMobile



Sean Wallace
Chief Financial Officer

- 25+ years senior management and banking experience
- Prior CFO and Treasurer of Cogent Communications
- Former banking leadership positions at Standard Chartered Bank and J.P. Morgan



Scott Wisniewski
Chief Strategy Officer

- 15+ years of M&A / financing experience
- Previously Managing Director, TMT Investment Banking at Barclays
- Advised AST on its \$110mm Series B in 2019 and the SPAC merger / PIPE financing in 2021



Brian Heller
General Counsel and Secretary

- 20+ years of public company legal experience
- Prior General Counsel of Castle Brands Inc.
- Former Partner practicing Corporate and IP law



Chris Ivory
Chief Commercial Officer

- 25+ years in satcom, business development and government / regulatory affairs
- Led Commercial Business Unit as EVP Globecomm
- Former SVP of Satellite Land Services at EMC



Dr. Huiwen Yao
Chief Technology Officer

- 30+ years RF engineering + satcom
- Prior: Northrop Grumman Innovation Systems (Orbital ATK)
- 40+ GEO satellites built



Dr. Ray Sedwick
Chief Space Scientist

- Director, Space Power and Propulsion Lab at University of Maryland
- NASA Innovative Advanced Concepts Fellow

Manufacturing and assembly, integration & testing

Two locations in Midland, Texas with combined 185,000 sq ft with potential capacity to produce up to 6 satellites per month

Headquarters



Site 2



The Market



Market opportunity

Significant opportunity to change the lives of
billions of people around the globe

Source: GSMA market data as of 12/31/2021.

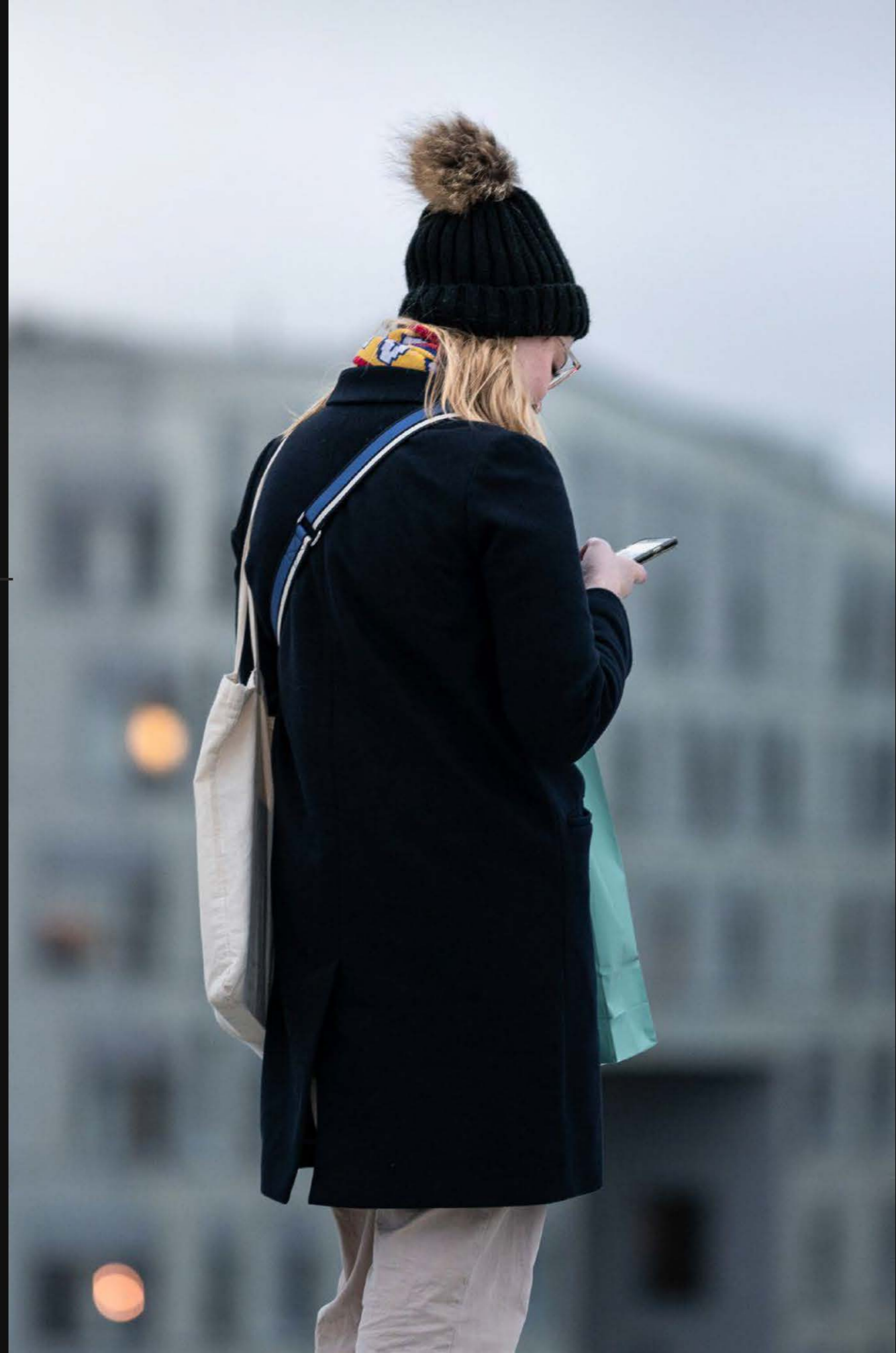
AST SpaceMobile

Designed to eliminate coverage
gaps and enable billions of people
globally to stay connected through their
mobile phones

\$1.1 Trillion+
global mobile wireless services market

5.3 Billion
mobile phones and devices moving in and out
of coverage

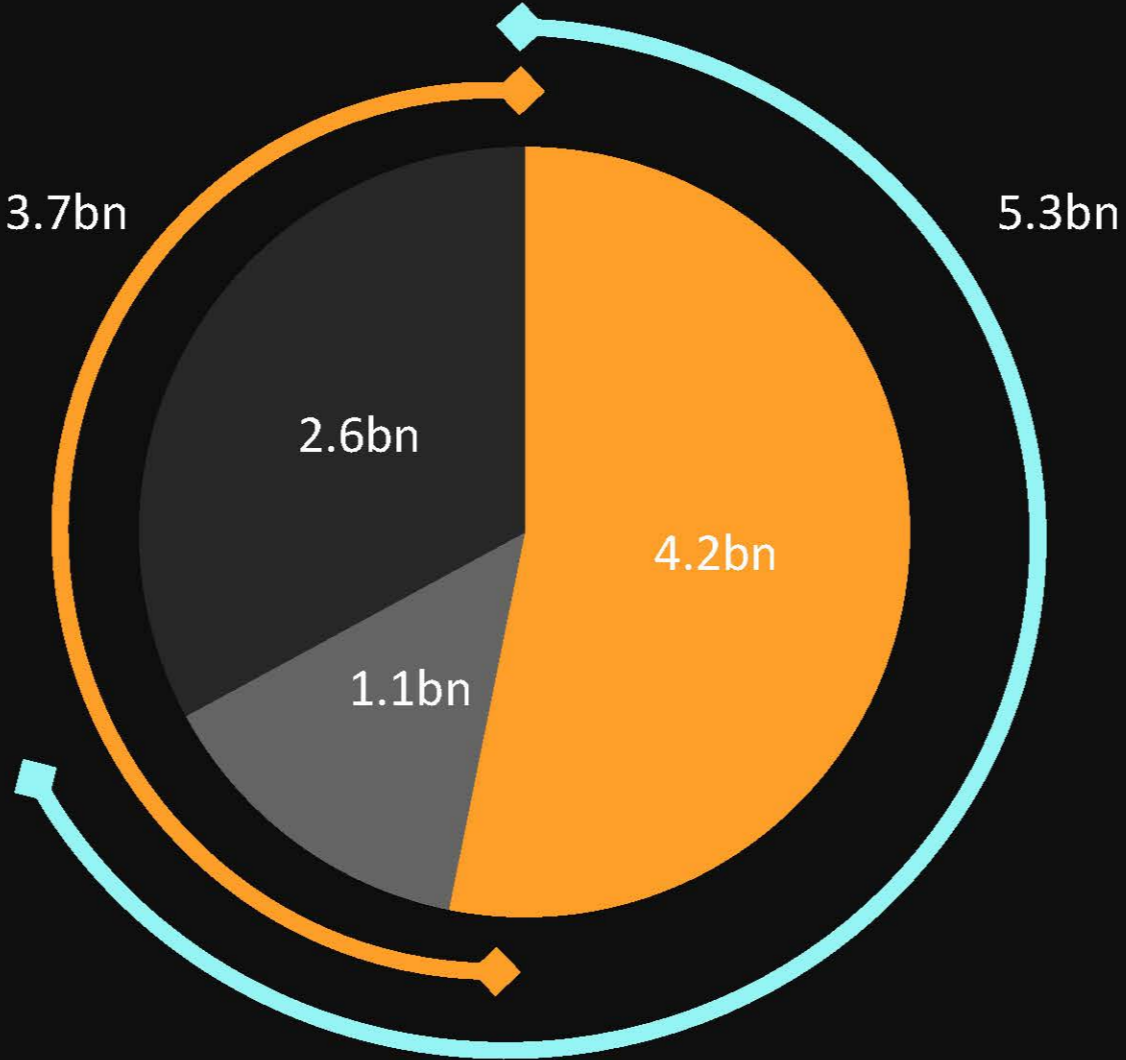
~50%
global population without cellular
broadband



5.3 billion mobile phones and devices globally

Global wireless services market generates over \$1.1 trillion in annual revenue, with a backdrop of evolving and imperfect networks

Global Population – 7.9 billion



5.3 billion unique cellular subscribers

move in and out of coverage as they live, work and travel

3.7 billion not subscribed to cellular broadband

0.5 billion have no coverage

3.2 billion usage gap

- Cellular subscribers - broadband
- Cellular subscribers - no broadband
- Not a cellular subscriber

Source: GSMA Intelligence (data as of 12/31/2021).

Everyone
connected
all the time



How subscribers are expected to use SpaceMobile

Significant flexibility in go-to-market strategy, with multiple potential ways for cellular subscribers to access more and better connectivity

Service designed to be compatible with the 5.3 billion existing mobile phones and devices in use globally today



Day Pass
(Ad-Hoc)

- Subscribers receive a text on their phone asking if they would like to turn on SpaceMobile service



Monthly Add-on
(Consumer)

- A fixed monthly rate to add SpaceMobile as a supplemental service to existing cellular plan
- Automatically connect with SpaceMobile's network upon entering an area without cell tower coverage



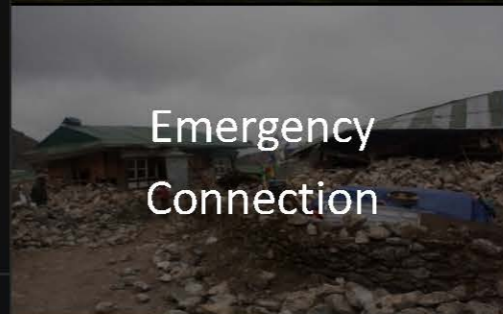
Monthly Add-on
(Enterprise)

- Same as consumer, but with more data targeting power users



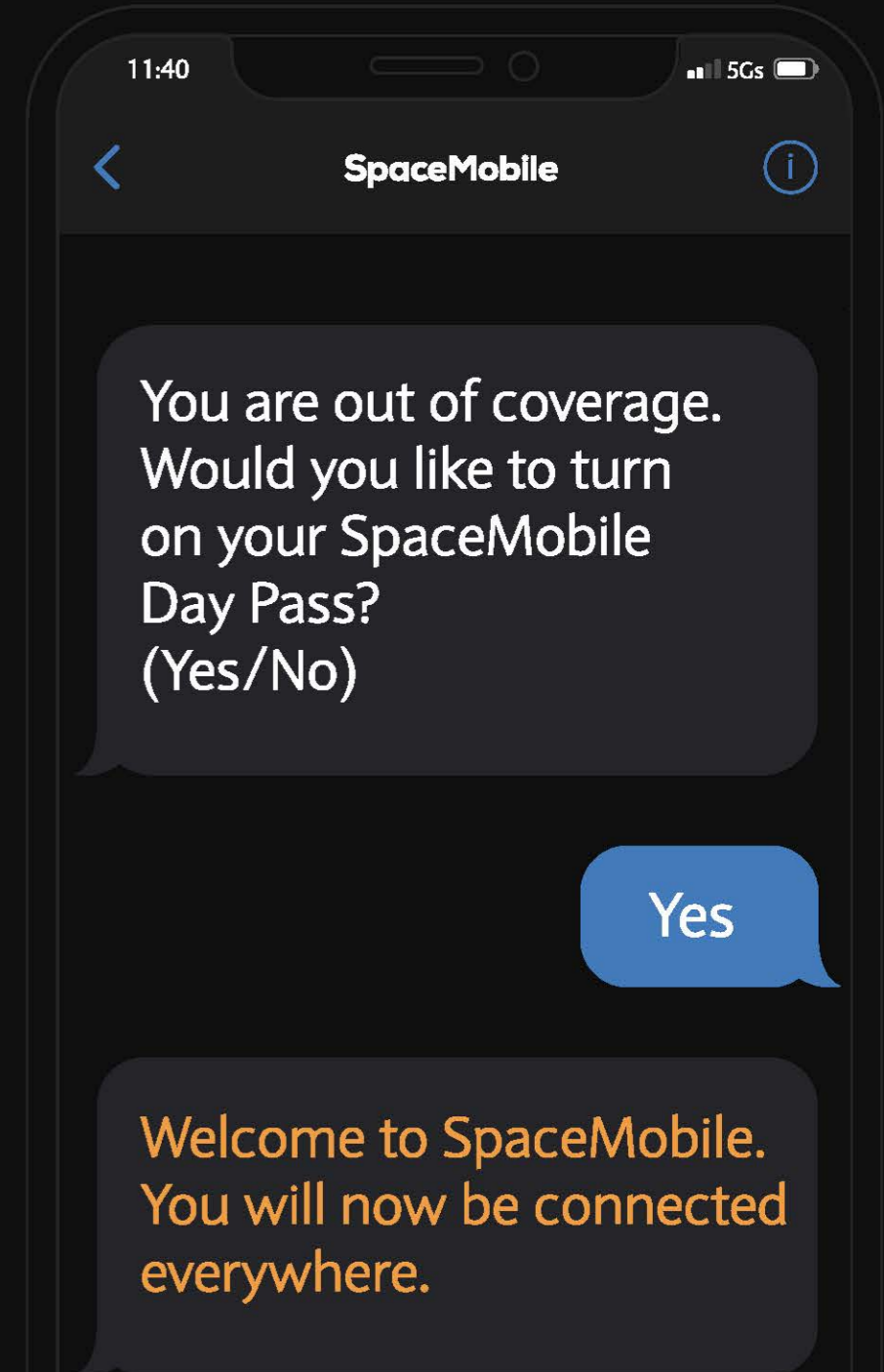
Standalone Plan
(Unconnected Subs)

- In areas without reliable cellular coverage today, subscribers would use and pay for SpaceMobile as their primary network
- Incumbent wireless companies would sell phones and market service



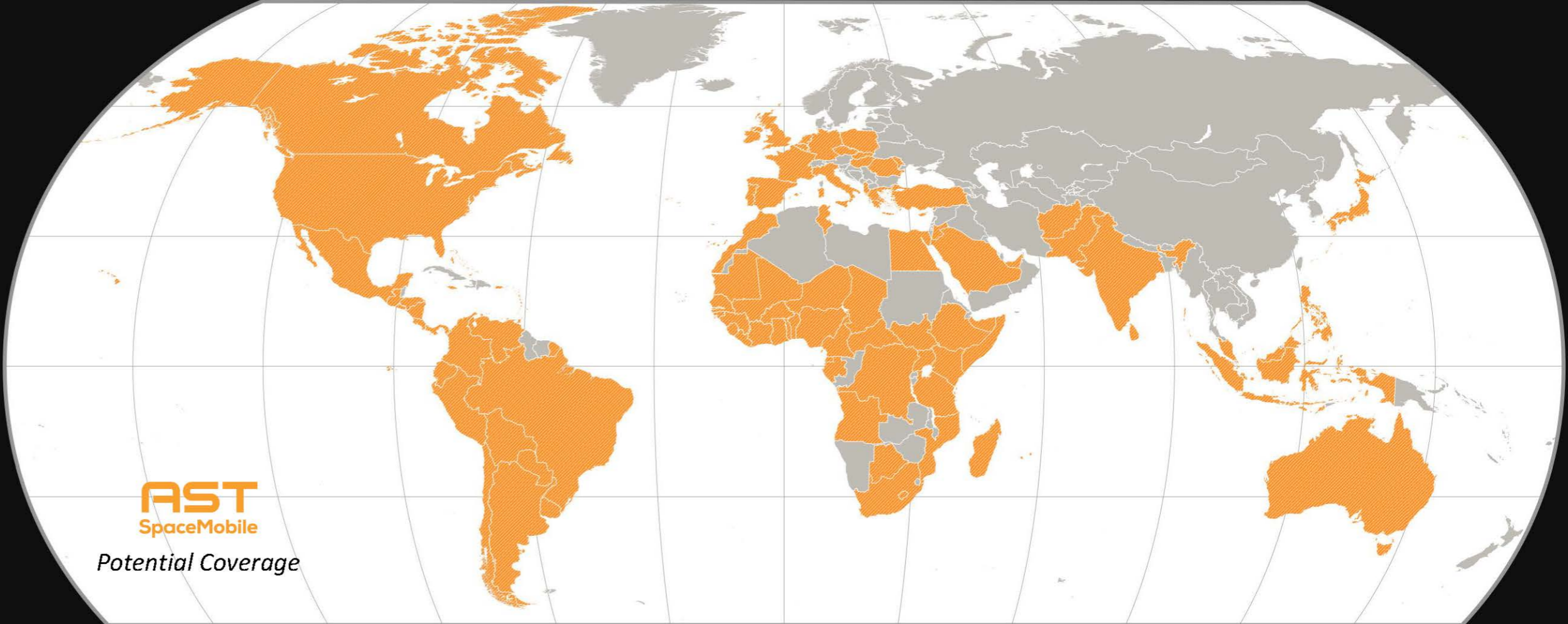
Emergency
Connection

- Subscribers would use SpaceMobile during emergencies and natural disasters when terrestrial networks have failed



Critical MNO relationships

When operational, SpaceMobile service will be available to our MNO customers, a growing list of leading companies that have over 1.8 billion existing subscribers¹



Source: GSMA Intelligence (data as of 12/31/2021).
1. Metric defined as number of subscribers represented by mobile network operators who have agreements and understandings with AST SpaceMobile as of 8/15/2022.

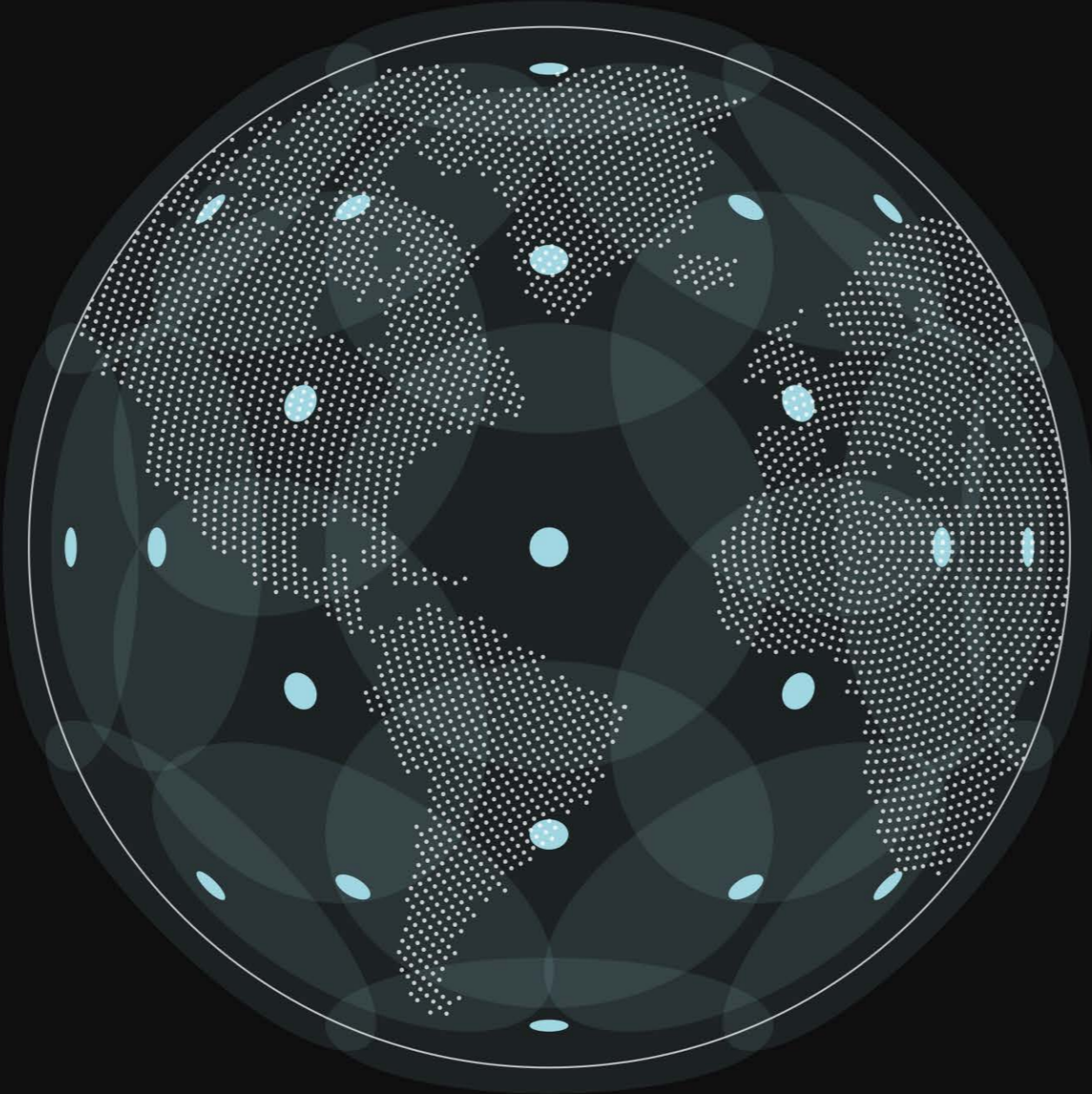
- ✓ Leverages existing 5.3 billion mobile phones and devices
- ✓ Strategic relationship with Vodafone
- ✓ Super-wholesale revenue share model
- ✓ Drives new MNO revenue and reduced churn
- ✓ Direct-to-phone native cellular architecture
- ✓ Easy sign-up for cellular subscribers

The Technology



Technology highlights

With 2,400+ patent and patent-pending claims (as of 8/15/2022), AST SpaceMobile's technology is designed to provide global broadband service directly to unmodified mobile phones



Patented

Ultra-powerful satellites leveraging existing technologies

2G/3G/4G LTE/5G & NB-IoT connectivity

No modifications to standard mobile phones or IoT devices



Seamless

Automatic roaming from land networks to space

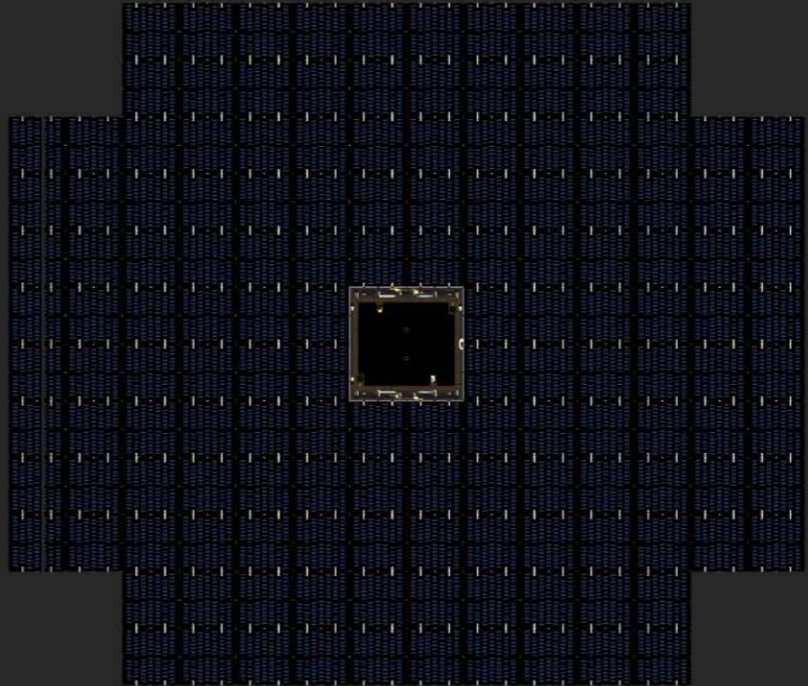


Everywhere

Worldwide 4G/5G speeds on land, at sea and in flight

Satellite-to-cellular architecture

SpaceMobile network designed to closely mirror terrestrial cellular architecture



Satellites in low Earth orbit offer low-latency and attractive look angles

Large satellites designed to create over 1 million fixed terrestrial cells globally with broadband capacity

Low- and mid-band frequencies shared with wireless customers on non-interference basis

High-throughput Q/V-band feeder links for backhaul

Direct link to unmodified mobile phones and other cellular devices



Gateways / Partner Network



Terrestrial Telecom Network

BlueWalker 3 Test Satellite



The Update

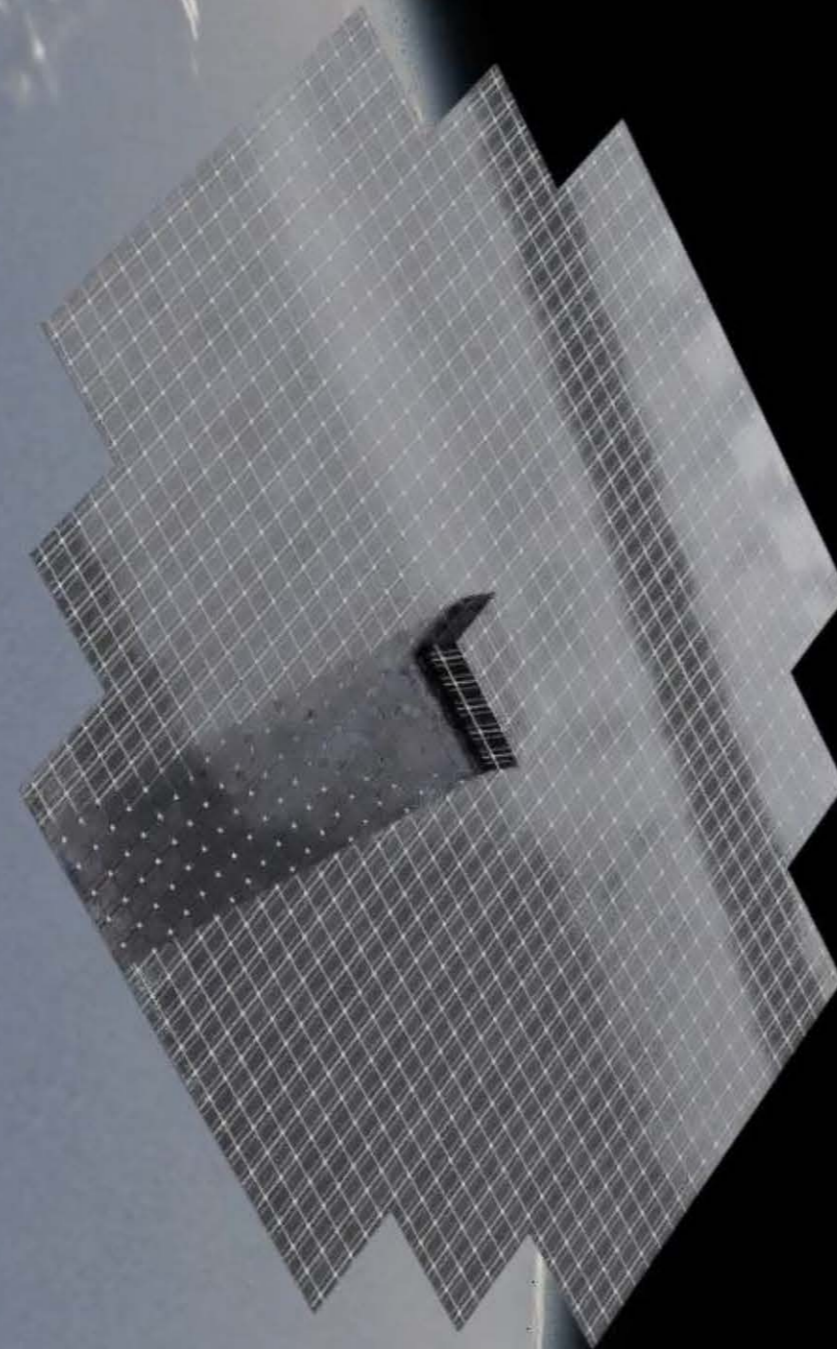


Technology and industrialization update



- ✓ Fully-assembled BlueWalker 3 (BW3) test satellite delivered to Cape Canaveral, FL
- ✓ Upcoming planned launch, with a launch window for early to mid-September
- ✓ The next five satellites are in initial phase of component construction, with design based on similar technology to BW3, including FPGA, reaction wheels and antennas, with launch planned in late 2023
- ✓ Commercial agreements in place with suppliers for most components of the next five Block 1 BlueBird satellites and next generation satellites
- ✓ Construction of the extension production facility (Site 2) in Texas is on schedule

BlueWalker 3 in-orbit plan

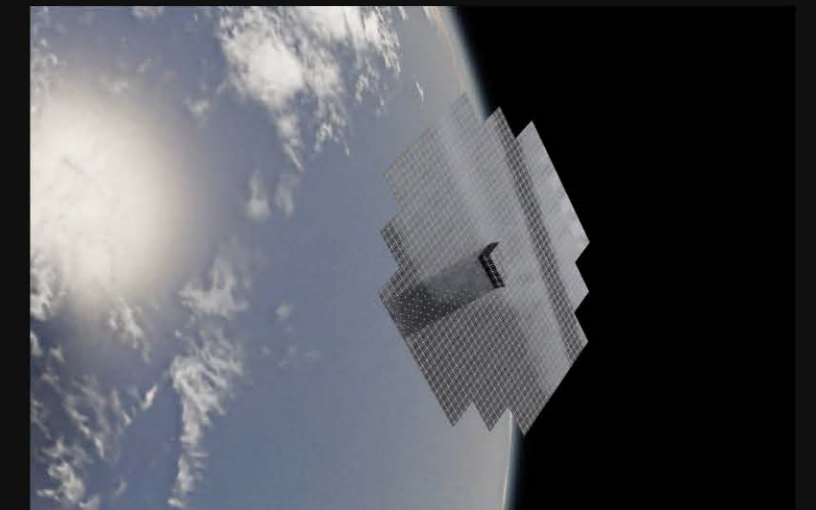


- Size: 693 square-foot phased array
- We believe BW3 will be one of the largest phased array antenna deployed into low Earth orbit
- Target Altitude: low Earth orbit
- Target Orbit: 53 degrees inclined
- Expected Speed: ~25,000 km/h (~17,000 mph)
- Expected to circle the Earth every ~90 minutes

BlueWalker 3 launch and testing timeline

Path to launch and BW3 in-orbit operations roadmap

BW3 Launch Milestones



Continued business momentum



Added three new operators ¹

new memoranda of understanding signed with additional operators, including Smartfren Telecom (Indonesia)



More than 1.8 billion subscribers ²

represented by mobile network operators with whom we have agreements and understandings



Increase to more than 2,400 patent and patent-pending claims ³

supports strong and expanding competitive advantage



Agreement to sell majority ownership stake in NanoAvionika UAB

at enterprise valuation of €65 million, and the Company expects to receive approximately \$27 million in net proceeds at closing ⁴



4G LTE/5G technology agreement with Nokia

for the integration of Nokia's AirScale System, which is planned to be offered as part of SpaceMobile's MNO infrastructure

Source: GSMA Intelligence (data as of 12/31/2021).

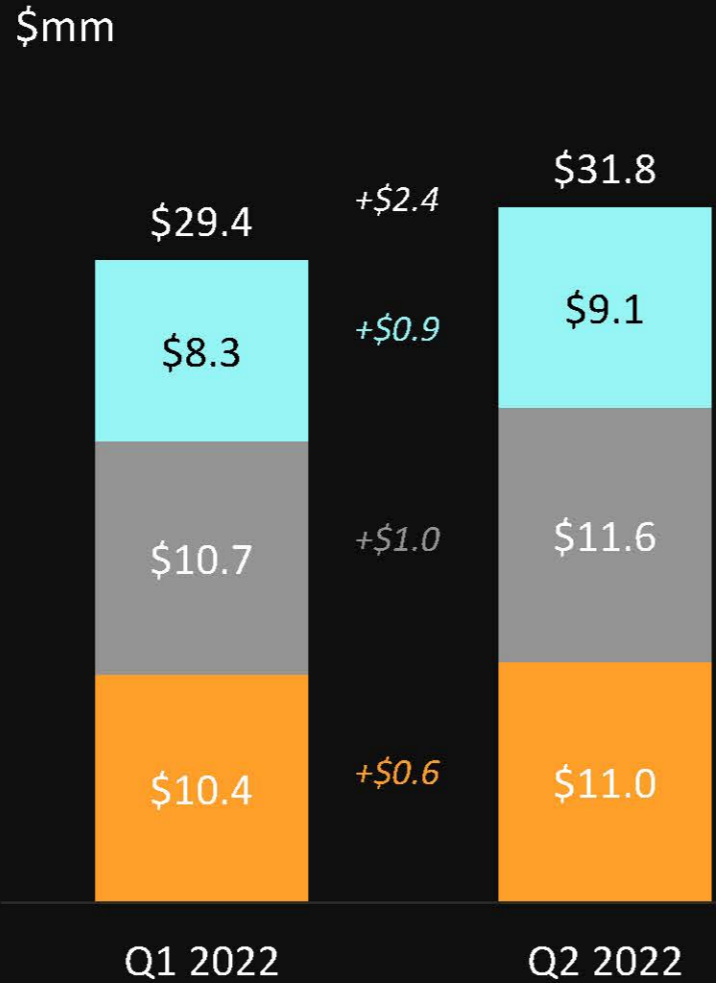
1. Since last business update provided on May 16, 2022.
2. Metric defined as number of subscribers represented by mobile network operators who have agreements and understandings with AST SpaceMobile as of August 15, 2022.
3. As of August 15, 2022, compared to more than 2,300 as of May 16, 2022.
4. Expected to close in the third quarter of 2022, subject to customary closing conditions including any required regulatory reviews. Reflects current estimate of net proceeds. Actual proceeds subject to fluctuation in the EUR / USD currency exchange rate and final closing balance sheet accounts.

Second quarter 2022 financial metrics

1. See the next slide for a reconciliation. Adjusted operating expenses is equal to total operating expense less non-cash operating expense such as depreciation and amortization and stock based-compensation expense. Depreciation and amortization for the three months ended June 30, 2022 and March 31, 2022 was \$1.2 million and \$1.1 million, respectively. Stock-based compensation for the three months ended June 30, 2022 and March 31, 2022 consisted of \$1.0 million and \$1.3 million of engineering services expense and \$1.5 million and \$1.0 million of general and administrative costs, respectively.

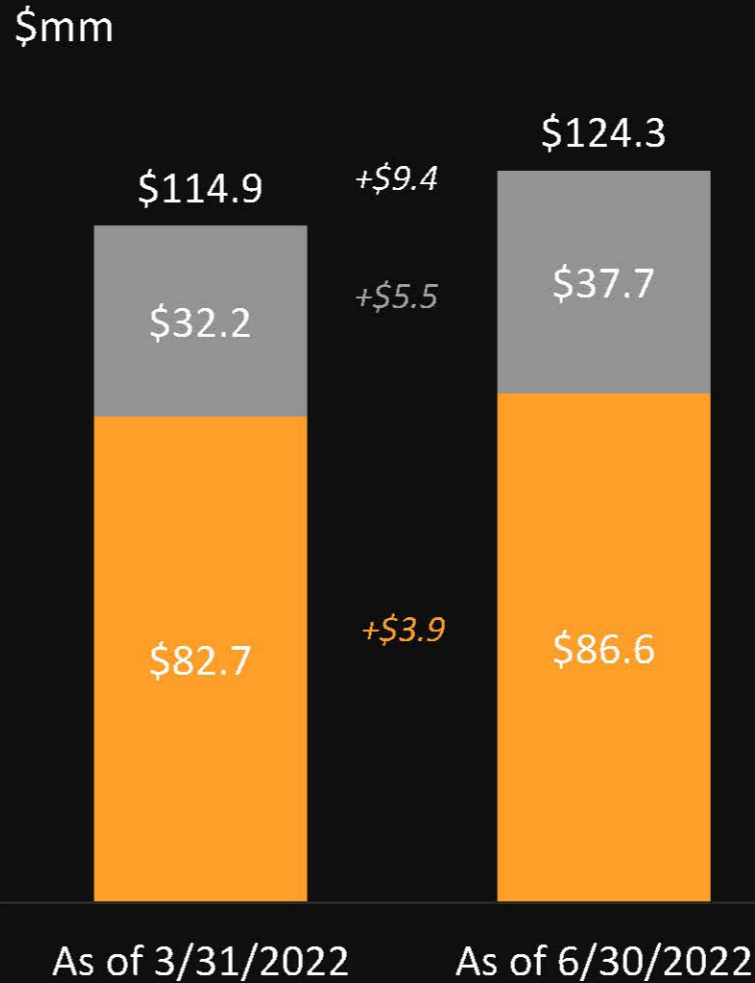
2. Cumulative as of date specified. Net of depreciation and amortization.

Adj. Operating Expenses ¹



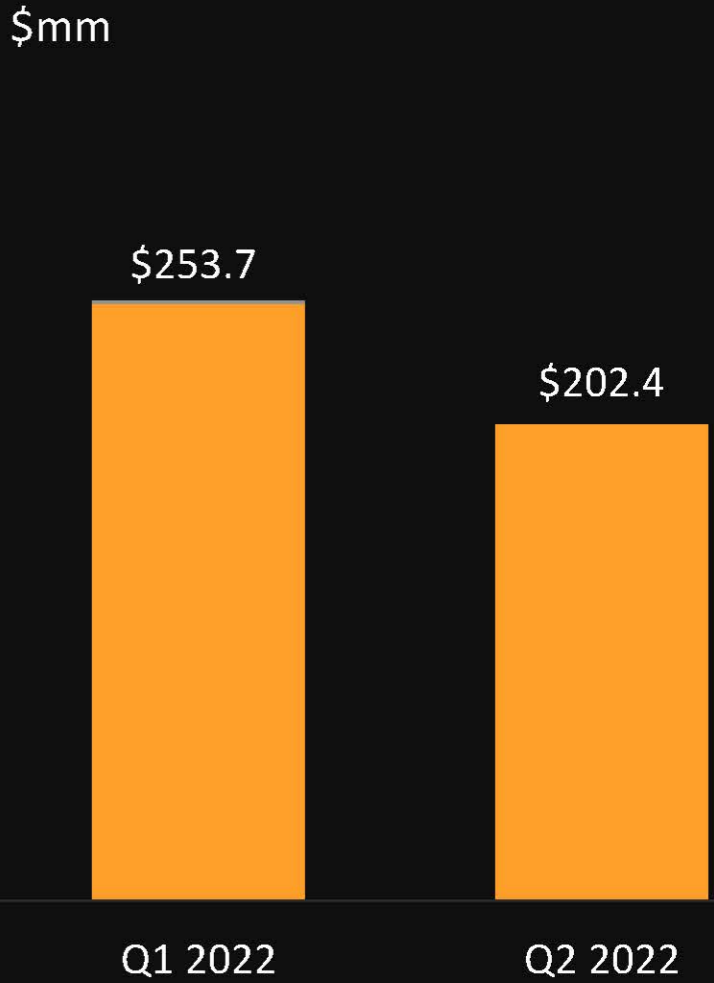
- Research and development costs
- General and administrative costs
- Engineering services

Capital Expenditures ²



- Property and equipment
- BlueWalker 3 Satellite - construction in process

Liquidity



- Cash Position

AST SpaceMobile differentiation



Only pure play, low Earth orbit (LEO) broadband communications company that is publicly-traded



Novel technology solution applicable to a market of 5.3 billion mobile phones and devices and the related \$1.1 trillion+ TAM ¹



Jointly going to market, not competing, with mobile network operators with hundreds of millions of subscribers



Revenue share business model designed to allow users to sign up with a simple text message



Approximately \$202 million cash and cash equivalents to fund business operations and initial production satellites ²

1. AST SpaceMobile market size based on GSMA Intelligence estimate of total cellular wireless market spend. As of 12/31/2021.
2. As of June 30, 2022.

Appendix



ASTS

share count

Shares ⁵	millions	Comment
Class A common stock	53.2	Publicly-traded shares
Class B common stock ^{1,2}	51.6	Series A / B shares
Class C common stock ^{1,2}	78.2	Abel Avellan ³ shares
Total basic shares	183.0	

Other ⁵

Public warrants	11.5	\$11.50 exercise price
Sponsor warrants	6.1	\$11.50 exercise price
Incentive equity ⁴ / stock options and RSUs	16.2	Management grants outstanding as of 6/30/2022

- Following the Business Combination with NPA on April 6, 2021, the Company was organized as an umbrella partnership-C corporation ("Up-C") structure. As a result of the Up-C structure, the Company is a holding company and, accordingly, all the business of AST is held directly by AST LLC, of which we are the managing member.
- The Class B and C common stockholders own economic interests in AST LLC which are redeemable into either shares of Class A common stock on a one-for-one basis or cash at the option of the Election Redemption Committee. See AST's Quarterly Report on Form 10-Q, filed with the SEC on August 15, 2022, for additional detail.
- Mr. Avellan has historically asked not to be paid any base salary in excess of applicable minimum wage requirements under federal law and, as such, has received substantially below-market base salary. Effective as of the completion of the Business Combination, Mr. Avellan is not receiving any base salary from the Company.
- Includes 11.3 million AST LLC 2019 Incentive Equity Options. Except as otherwise provided by the AST Board of Directors, each AST Incentive Equity Unit will be redeemable for one share of Class A Common Stock on the later of April 6, 2023 and the six-month anniversary of the vesting date.
- Basic shares count as of 8/5/2022. Warrants, incentive equity options, and RSUs as of 6/30/2022.

Reconciliation to non-GAAP measures – adj. operating expenses

1. Stock-based compensation for the three months ended June 30, 2022, March 31, 2022, and June 30, 2021 consisted of \$1.0 million, \$1.3, and \$0.2 million of engineering services expense and \$1.5 million, \$1.0, and \$0.0 million of general and administrative costs, respectively.
2. Stock-based compensation for the six months ended June 30, 2022 and 2021 consisted of \$2.3 million and \$0.5 million of engineering services expense and \$2.4 million and \$0.1 million of general and administrative costs, respectively.

Adj. operating expenses – 3 months ended

<i>(\$ in thousands)</i>	June 30, '22	Mar 31, '22	June 30, '21
Engineering services	11,999	11,717	5,784
General and administrative costs	13,075	11,643	9,157
Research and development costs	9,145	8,281	9,589
Depreciation and amortization	1,185	1,100	567
Total operating expenses	35,404	32,741	25,097
Less: Depreciation and amortization	(1,185)	(1,100)	(567)
Less: Stock-based Compensation Expense ¹	(2,440)	(2,255)	(242)
Total adj. operating expenses	31,779	29,386	24,288

Adj. operating expenses – 6 months ended

<i>(\$ in thousands)</i>	June 30, '22	June 30, '21
Engineering services	23,716	10,731
General and administrative costs	24,718	14,693
Research and development costs	17,426	10,603
Depreciation and amortization	2,285	1,182
Total operating expenses	68,145	37,209
Less: Depreciation and amortization	(2,285)	(1,182)
Less: Stock-based Compensation Expense ²	(4,695)	(598)
Total adj. operating expenses	61,165	35,429

The logo for AST SpaceMobile is centered on the left side of the image. 'AST' is written in a large, white, bold, sans-serif font. 'SpaceMobile' is written in a smaller, orange, bold, sans-serif font to the right of 'AST'. The background is a dark blue space with a bright orange arc of light curving across the top right and a field of small white stars.

AST SpaceMobile

The Nasdaq logo consists of a stylized white 'N' symbol followed by the word 'Nasdaq' in a white sans-serif font.

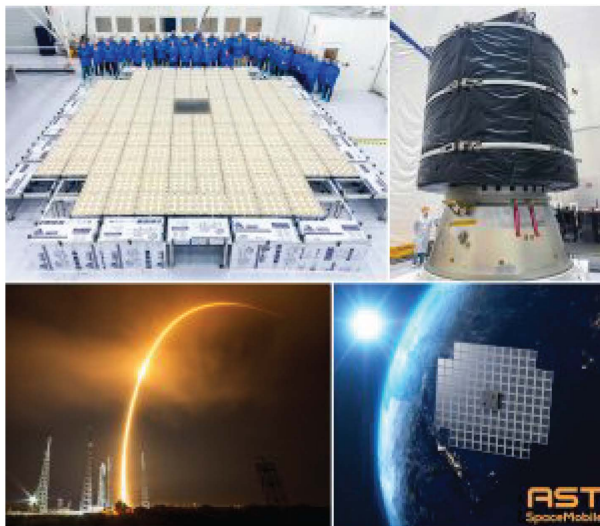
Nasdaq

The text 'NASDAQ: ASTS' is written in a smaller, orange, sans-serif font below the Nasdaq logo.

NASDAQ: ASTS

AST SpaceMobile Confirms Successful Launch of BlueWalker 3 Into Orbit

September 13, 2022



MIDLAND, TX, September 13, 2022 – [AST SpaceMobile, Inc.](#) (“AST SpaceMobile”) ([NASDAQ: ASTS](#)), the company building the first and only space-based cellular broadband network accessible directly by standard mobile phones, has confirmed the successful placement of BlueWalker 3 into space.

The BlueWalker 3 test satellite successfully launched on Saturday, September 10, 2022, at 9:20 pm EDT from Cape Canaveral, Florida. Engineers made contact with BlueWalker 3 less than an hour after take-off, confirming its trajectory.

“BlueWalker 3 is on course and securely circling the earth,” said Scott Wisniewski, Chief Strategy Officer of AST SpaceMobile. “The satellite is thermally stable and communicating directly with ground stations. Our

team is now operating from three global mission control centers, including Maryland, Colorado and Australia, where we are directly receiving data from BlueWalker 3.”

AST SpaceMobile broadcasted live from launch pad 39A before lifting off, interviewing key partners from American Tower, Vodafone Group and Nokia. Replays of the show's executive interviews, including Chairman and CEO of AST SpaceMobile Abel Avellan, can be found on the company's [YouTube](#) page.

“A major achievement in our mission to connect the unconnected has been accomplished,” said Abel Avellan, Chairman and CEO of AST SpaceMobile. “We are working hard to ensure that no one becomes a second-class citizen, regardless of where they live or work, because of their lack of access to cellular broadband.”

AST SpaceMobile has a portfolio of more than 2,400 patent- and patent-pending claims supporting its space-based cellular broadband technology, with agreements and understandings with over 25 Mobile Network Operators (“MNOs”) globally, who collectively provide service to over 1.8 billion subscribers. MNOs in the mission's test plans include Vodafone Group, Rakuten Mobile, AT&T, Orange, and others.

AST SpaceMobile continues preparations for the assembly and production of the next phase of satellites called BlueBirds in Texas. Once BlueWalker 3 is operational following in-orbit testing and configuration, testing is planned with MNOs and equipment providers on all 6 inhabited continents.

In-orbit operations and deployment of the BlueWalker 3 satellite is subject to numerous contingencies and technical factors, which must occur successfully to enable the mission's goal of testing direct-to-cell phone broadband connectivity. These factors include, but are not limited to, opening of the satellite's phased array and in orbit operation of the satellite's hardware and software systems.

Follow AST SpaceMobile on social media and the company's [website](#) for further updates on BlueWalker 3's journey and future progress. For an explanation of how BlueWalker 3 works, watch this [video](#).

About AST SpaceMobile

AST SpaceMobile is building the first and only global cellular broadband network in space to operate directly with standard, unmodified mobile devices based on our extensive IP and patent portfolio. Our engineers and space scientists are on a mission to eliminate the connectivity gaps faced by today's five billion mobile subscribers and finally bring broadband to the billions who remain unconnected. For more information, follow AST SpaceMobile on [YouTube](#), [Twitter](#), [LinkedIn](#) and [Facebook](#). Watch [this video](#) for an overview of the SpaceMobile mission.

Forward-Looking Statements

This communication contains "forward-looking statements" that are not historical facts, and involve risks and uncertainties that could cause actual results of AST SpaceMobile to differ materially from those expected and projected. These forward-looking statements can be identified by the use of forward-looking terminology, including the words "believes," "estimates," "anticipates," "expects," "intends," "plans," "may," "will," "would," "potential," "projects," "predicts," "continue," or "should," or, in each case, their negative or other variations or comparable terminology.

These forward-looking statements involve significant risks and uncertainties that could cause the actual results to differ materially from the expected results. Most of these factors are outside AST SpaceMobile's control and are difficult to predict. Factors that may cause such differences include, but are not limited to: (i) expectations regarding AST SpaceMobile's strategies and future financial performance, including AST's future business plans or objectives, expected functionality of the SpaceMobile Service, anticipated timing and level of deployment of satellites, anticipated demand and acceptance of mobile satellite services, prospective performance and commercial opportunities and competitors, the timing of obtaining regulatory approvals, ability to finance its research and development activities, commercial partnership acquisition and retention, products and services, pricing, marketing plans, operating expenses, market trends, revenues, liquidity, cash flows and uses of cash, capital expenditures, and AST's ability to invest in growth initiatives; (ii)

the negotiation of definitive agreements with mobile network operators relating to the SpaceMobile service that would supersede preliminary agreements and memoranda of understanding; (iii) the ability of AST SpaceMobile to grow and manage growth profitably and retain its key employees and AST SpaceMobile's responses to actions of its competitors and its ability to effectively compete; (iv) changes in applicable laws or regulations; (v) the possibility that AST SpaceMobile may be adversely affected by other economic, business, and/or competitive factors; (vi) the outcome of any legal proceedings that may be instituted against AST SpaceMobile; and (vii) other risks and uncertainties indicated in the Company's filings with the SEC, including those in the Risk Factors section of AST SpaceMobile's Form 10-K filed with the SEC on March 31, 2022.

The planned deployment and testing of the BW3 test satellite may not be completed due to a variety of factors, which could include loss of satellite connectivity, destruction of the satellite, deployment failure of the phased array, hardware or software system failures, or other communication failures, and even if completed, the BW3 testing may indicate adjustments that are needed or modifications that must be made, any of which could result in additional costs, which could be material, and delays in commercializing our service. If there are delays or issues with our testing, it may become more costly to raise capital, if we are able to do so at all.

AST SpaceMobile cautions that the foregoing list of factors is not exclusive. AST SpaceMobile cautions readers not to place undue reliance upon any forward-looking statements, which speak only as of the date made. For information identifying important factors that could cause actual results to differ materially from those anticipated in the forward-looking statements, please refer to the Risk Factors incorporated by reference into AST SpaceMobile's Form 10-K filed with the SEC on March 31, 2022. AST SpaceMobile's securities filings can be accessed on the EDGAR section of the SEC's website at www.sec.gov. Except as expressly required by applicable securities law, AST SpaceMobile disclaims any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise.

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STARLINK

RENTAL BUSINESS TECHNOLOGY MARKETPLACE SUPPORT

WORLD'S MOST ADVANCED BROADBAND SATELLITE INTERNET

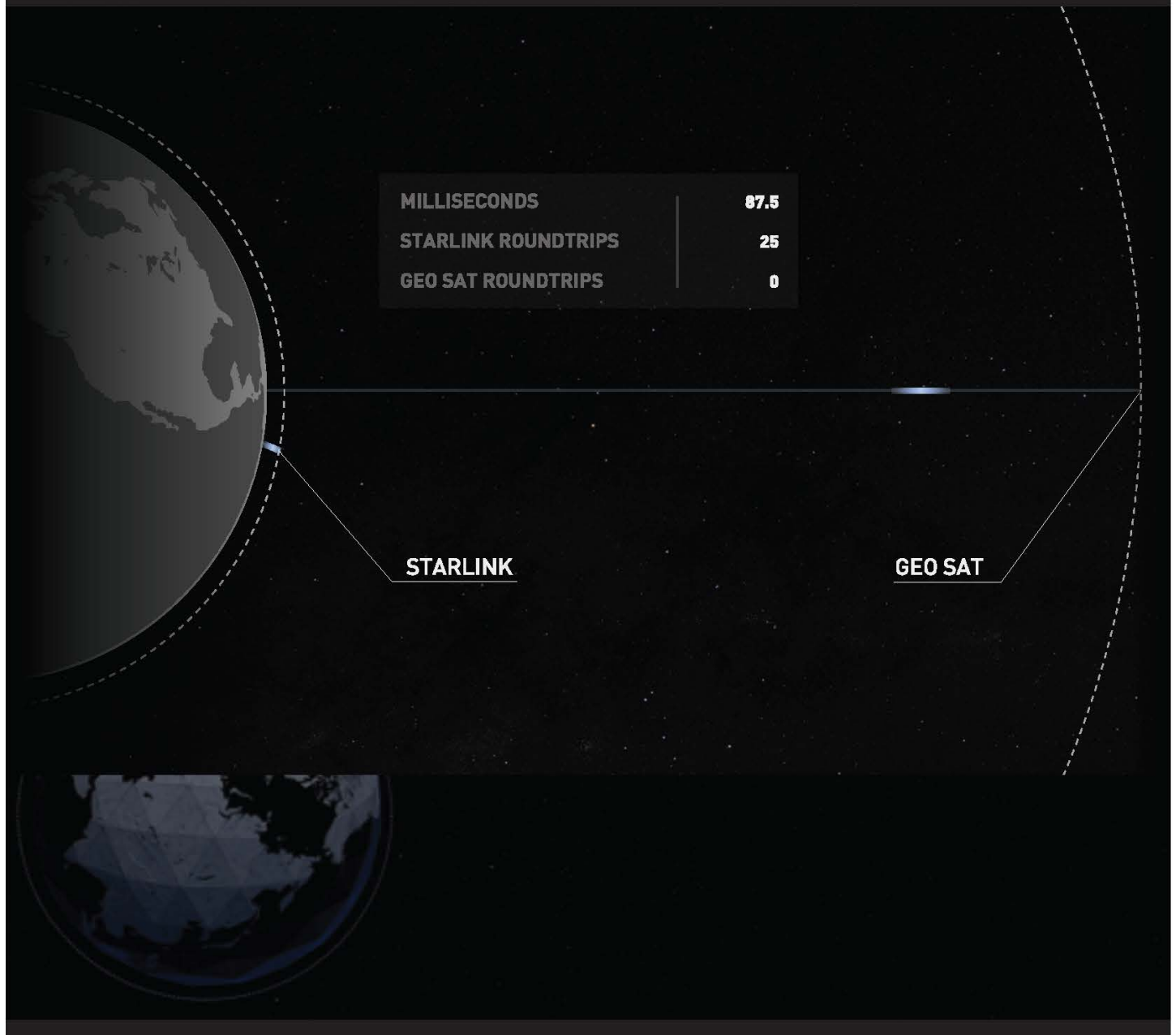
Starlink is the world's first and largest satellite constellation using a low Earth orbit to deliver broadband internet capable of supporting streaming, online gaming, video calls and more.

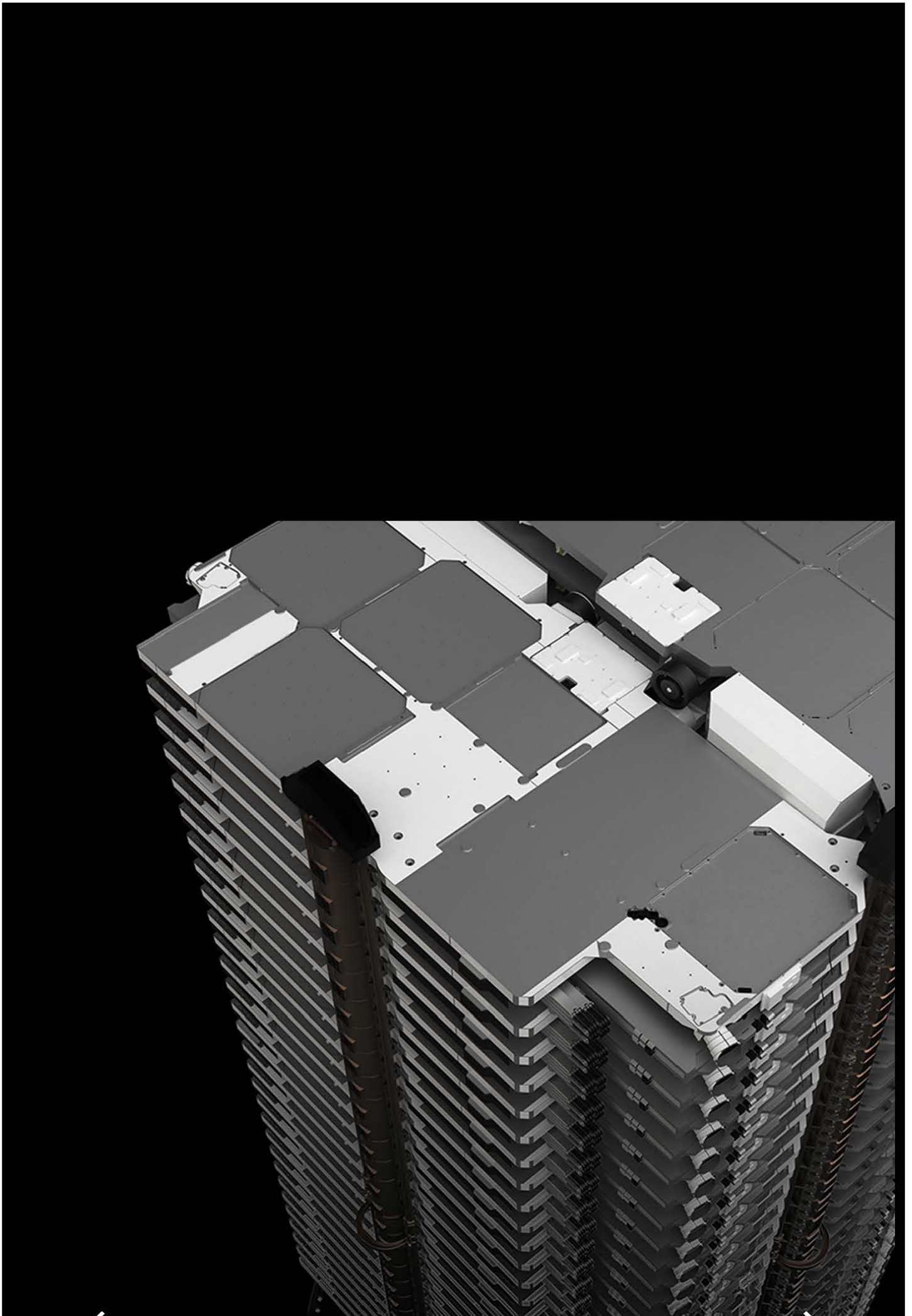
Leveraging advanced satellites and user hardware coupled with our deep experience with both spacecraft and on-orbit operations, Starlink delivers high-speed, low-latency internet to users all over the world.

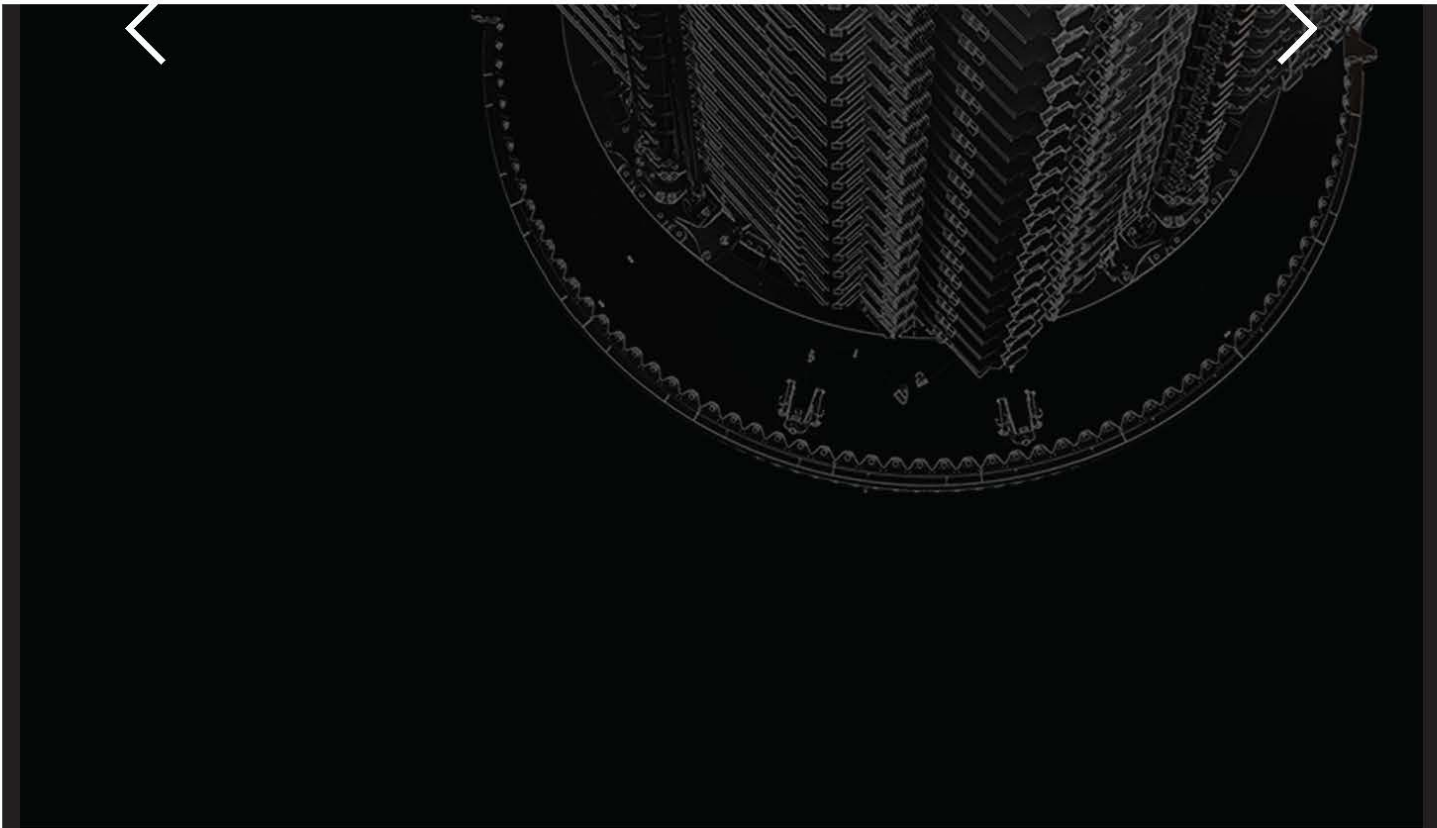
HOW STARLINK WORKS

Most satellite internet services come from single geostationary satellites that orbit the planet at 35,786 km. As a result, the round trip data time between the user and satellite—also known as latency—is high, making it nearly impossible to support streaming, online gaming, video calls or other high data rate activities.

Starlink is a constellation of thousands of satellites that orbit the planet much closer to Earth, at about 550km, and cover the entire globe. Because Starlink satellites are in a low orbit, latency is significantly lower—around 20 ms vs 600+ ms.

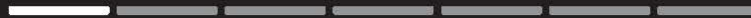






LESS MASS, MORE COMPACT

Each satellite features a compact, flat-panel design that minimizes volume, allowing for a denser



SELF-ORIENTING

FOR SELF- INSTALL

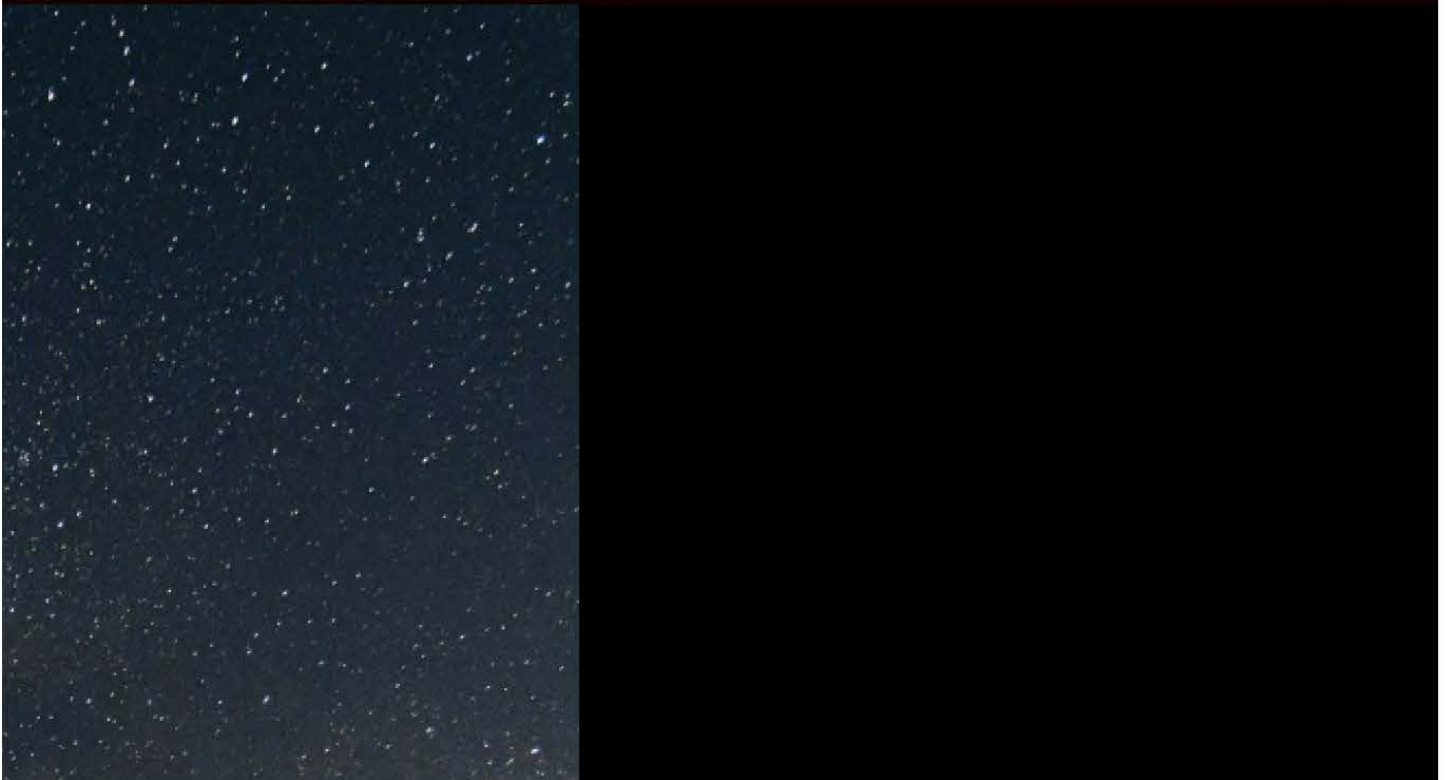
Starlink is the first commercially available phased array antenna. Your Starlink Kit arrives with everything you need to get online in minutes including your Starlink, WiFi router, cables and base. It is self-orienting and connects in minutes as long as it has a clear view of the sky.

Starlink can withstand extreme cold, heat, hail, sleet, heavy rain, gale force winds, and even rocket engines.

[VIEW TECHNICAL SPECS](#)

REGULAR ACCESS TO SPACE

As the world's leading provider of launch services, SpaceX is the only satellite operator with the ability to launch its own satellites as needed. With frequent, low-cost launches, Starlink satellites are constantly updated with the newest technology.



LEADER IN SPACE SUSTAINABILITY

Starlink not only leads the industry in innovations to reduce satellite brightness, but also on-orbit debris mitigation—meeting or exceeding all regulatory and industry standards.

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Starlink is a division of SpaceX. Visit us at [spacex.com](https://www.spacex.com)

Press release

Amazon Secures Up to 83 Launches from Arianespace, Blue Origin, and United Launch Alliance for Project Kuiper

April 5, 2022 at 7:00 AM EDT

Agreements comprise the largest commercial procurement of launch vehicles in history, providing heavy-lift capacity for Project Kuiper to deploy majority of its low Earth orbit (LEO) constellation of 3,236 satellites

Launches planned with Arianespace's Ariane 6, Blue Origin's New Glenn, and United Launch Alliance's Vulcan Centaur rockets; Beyond Gravity to build low-cost, scalable dispenser system to deploy satellites

Agreements will drive innovation and job creation across the space industry, supporting thousands of suppliers and highly skilled jobs in 49 states across the United States and 13 countries in Europe

SEATTLE--(BUSINESS WIRE)--Apr. 5, 2022-- Amazon (NASDAQ: AMZN) today announced agreements with Arianespace, Blue Origin, and United Launch Alliance (ULA) to provide heavy-lift launch services for Project Kuiper, Amazon's initiative to increase global broadband access using a constellation of satellites in low Earth orbit (LEO). The contracts total up to 83 launches over a five-year period, providing capacity for Amazon to deploy the majority of its 3,236-satellite constellation. It is the largest commercial procurement of launch vehicles in history.

This press release features multimedia. View the full release here:

<https://www.businesswire.com/news/home/20220405005519/en/>
[\(https://www.businesswire.com/news/home/20220405005519/en/\)](https://www.businesswire.com/news/home/20220405005519/en/)



Artist's concept of the Ariane 6, New Glenn, and Vulcan Centaur rockets to be used by Amazon's Project Kuiper. (Photo: Business Wire)

"Project Kuiper will provide fast, affordable broadband to tens of millions of customers in unserved and underserved communities around the world," said Dave Limp, Senior Vice President for Amazon Devices & Services. "We still have lots of work ahead, but the team has continued to hit milestone after milestone across every aspect of our satellite system. These launch agreements reflect our incredible commitment and belief in Project Kuiper, and we're proud to be working with such an impressive lineup of partners to deliver on our mission."

Project Kuiper aims to provide high-speed, low-latency broadband to a wide range of customers, including individual households, schools, hospitals, businesses, government agencies, disaster relief operations, mobile operators, and other

organizations working in places without reliable internet connectivity. Amazon is designing and developing the entire system in-house, combining a constellation of advanced LEO satellites with small, affordable [customer terminals](https://cts.businesswire.com/ct/CT?id=smartlink&url=https%3A%2F%2Fwww.aboutamazon.com%2Fnews%2Finnovation-at-amazon%2Famazon-marks-breakthrough-in-project-kuiper-development&sheet=52648447&newsitemid=20220405005519&lan=en-US&anchor=customer+terminals&index=1&md5=93d7d6b68d617477ae9de208f3d54a1c) and a secure, resilient ground-based communications network. Project Kuiper will leverage Amazon's global logistics and operations footprint, as well as Amazon Web Services' (AWS) networking and infrastructure, to serve a diverse, global customer base. Project Kuiper will also apply Amazon's experience producing low-cost devices and services like Echo and Kindle to deliver service at an affordable, accessible price for customers.

"Securing launch capacity from multiple providers has been a key part of our strategy from day one," said Rajeev Badyal, Vice President of Technology for Project Kuiper at Amazon. "This approach reduces risk associated with launch vehicle stand-downs and supports competitive long-term pricing for Amazon, producing cost savings that we can pass on to our customers. These large, heavy-lift rockets also mean we can deploy more of our constellation with fewer launches, helping simplify our launch and deployment schedule. We're excited to move one step closer to connecting residential, business, and government customers around the world."

The scale of these contracts will also boost the wider launch services industry, driving innovation and job creation in the United States and Europe. Suppliers from 49 U.S. states help develop and manufacture the next-generation, heavy-lift launch vehicles from Blue Origin and ULA, while Arianespace relies on ArianeGroup's network of suppliers from 13 European countries to produce its Ariane 6 rocket. In addition, Amazon is working with Beyond Gravity (formerly RUAG

Space), a Switzerland-headquartered space technology provider, to build low-cost, scalable satellite dispensers that will help deploy the Project Kuiper constellation. Beyond Gravity is opening an all-new production facility as a result of the partnership, doubling its production capacity and creating dozens of jobs in Linköping, Sweden.

Arianespace

Arianespace, the European spaceline, has established itself as a leader in the global launch services industry, completing 15 successful launches last year, including the launch of the James Webb Space Telescope in late December. Arianespace is on its way to start operating its next-generation heavy-lift launch vehicle, Ariane 6, which is scheduled to launch for the first time by the end of this year. Amazon has secured 18 Ariane 6 rockets as part of this initial agreement.

"This contract, the largest we've ever signed, is a great moment in Arianespace's history. We are honored to be given a significant role to play in the deployment of Amazon's Project Kuiper, which aims to connect tens of millions of people to the internet," said Stéphane Israël, CEO of Arianespace. "It will build on the European innovative spirit, industrial might, and years of experience, and it is a major win for the European launcher industry. That Amazon has chosen the Ariane 6 to do the job is a matter of tremendous pride for us and a great vote of confidence in our new launch vehicle."

Blue Origin

Amazon has signed an agreement with Blue Origin to secure 12 launches using New Glenn, with options for up to 15 additional launches. New Glenn is powered by seven BE-4 engines and its reusable first stage is built for a minimum of 25 missions.

"We're honored to support Amazon's ambitious mission to provide reliable, affordable broadband to unserved and underserved communities around the world through New Glenn and our BE-4 engines," said Jarrett Jones, Senior Vice President, New Glenn, Blue Origin. "New Glenn's seven-meter fairing offers unprecedented mass and volume capabilities, providing Project Kuiper maximum launch flexibility. We also congratulate our partner, United Launch Alliance. We're proud to build American-made engines for ULA's Vulcan Centaur."

United Launch Alliance

Amazon's agreement with ULA covers 38 launches on Vulcan Centaur, ULA's newest heavy-lift launch vehicle. This launch services contract also covers production and launch infrastructure to support a higher cadence of launches at Cape Canaveral Space Force Station, including a new, dedicated version of the Vulcan Launch Platform (VLP). ULA is making additional investments in its Spaceflight Processing & Operations Center (SPOC) to deliver a second ULA facility capable of full vehicle processing, transforming the launch site to have two parallel "launch lanes" for high-cadence operations. The agreement is in addition to Project Kuiper's existing deal to secure nine Atlas V vehicles from ULA.

"This agreement marks the beginning of an exciting new era for ULA and for the entire U.S. launch industry. With a total of 47 launches between our Atlas and Vulcan vehicles, we are proud to launch the majority of this important constellation," said Tory Bruno, ULA's president and CEO. "It will support hundreds of jobs, especially in places like Alabama, Colorado and Florida, and Amazon's investments in launch infrastructure and capability upgrades will benefit both commercial and government customers."

Project Kuiper plans to launch two prototype missions [later this year \(https://cts.businesswire.com/ct/CT?id=smartlink&url=https%3A%2F%2Fwww.aboutamazon.com%2Fnews%2Finnovation-at-amazon%2Fproject-kuiper-announces-plans-and-launch-provider-for-prototype-satellites&esheet=52648447&newsitemid=20220405005519&lan=en-US&anchor=later+this+year&index=2&md5=2ab2087f899aacc6d788a8abbcb4a233\)](https://cts.businesswire.com/ct/CT?id=smartlink&url=https%3A%2F%2Fwww.aboutamazon.com%2Fnews%2Finnovation-at-amazon%2Fproject-kuiper-announces-plans-and-launch-provider-for-prototype-satellites&esheet=52648447&newsitemid=20220405005519&lan=en-US&anchor=later+this+year&index=2&md5=2ab2087f899aacc6d788a8abbcb4a233) on ABL Space Systems' RS1 rocket. There are now more than 1,000 people at Amazon working on Project Kuiper, and the team continues to make progress as it approaches a full, production-ready deployment—finalizing its high-performance satellite design, producing a compact, affordable customer terminal, and deploying a secure, reliable communications network that connects satellites to customers and infrastructure on the ground. Once deployed, the Kuiper System will have the capacity to serve tens of millions of residential, business, and government customers in places without reliable broadband. Moving forward, Amazon will continue to partner with companies that share its commitment to closing the global digital divide and creating new opportunities for innovation. To learn more about Project Kuiper, watch our [overview video \(https://cts.businesswire.com/ct/CT?id=smartlink&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3Dllos1LjCgCc&esheet=52648447&newsitemid=20220405005519&lan=en-US&anchor=overview+video&index=3&md5=5c2e2d7ef4b5d04f88d8fa55fc7e78d8\)](https://cts.businesswire.com/ct/CT?id=smartlink&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3Dllos1LjCgCc&esheet=52648447&newsitemid=20220405005519&lan=en-US&anchor=overview+video&index=3&md5=5c2e2d7ef4b5d04f88d8fa55fc7e78d8).

About Amazon

Amazon is guided by four principles: customer obsession rather than competitor focus, passion for invention, commitment to operational excellence, and long-term thinking. Amazon strives to be Earth's Most Customer-Centric Company, Earth's Best Employer, and Earth's Safest Place to Work. Customer reviews, 1-Click shopping, personalized recommendations, Prime, Fulfillment by Amazon, AWS, Kindle Direct Publishing, Kindle, Career Choice, Fire tablets, Fire TV, Amazon Echo, Alexa, Just Walk Out technology, Amazon Studios, and The Climate Pledge are some of the things pioneered by Amazon. For more information, visit [amazon.com/about \(https://cts.businesswire.com/ct/CT?id=smartlink&url=https%3A%2F%2Famazon.com%2Fabout&esheet=52648447&newsitemid=20220405005519&lan=en-US&anchor=amazon.com%2Fabout&index=4&md5=97d877021ee03156b34246f6096b7c64\)](https://cts.businesswire.com/ct/CT?id=smartlink&url=https%3A%2F%2Famazon.com%2Fabout&esheet=52648447&newsitemid=20220405005519&lan=en-US&anchor=amazon.com%2Fabout&index=4&md5=97d877021ee03156b34246f6096b7c64) and follow @AmazonNews.

Forward-Looking Statements

This press release includes forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical fact, including statements regarding anticipated business activities, made in this press release are forward-looking. We use words such as aims, anticipates, believes, expects, future, intends, will, and similar expressions to identify forward-looking statements. Forward-looking statements reflect management's current expectations and are inherently uncertain. Actual results and outcomes could differ materially for a variety of reasons, including, among others, changes in our liquidity, financial condition, or capital allocation and financing strategies or in the debt and equity markets, including as a result of fluctuations in foreign exchange rates, changes in global economic conditions and customer spending, world events, the rate of growth of the Internet, online commerce, and cloud services, the amount that [Amazon.com](https://cts.businesswire.com/ct/CT?id=smartlink&url=http%3A%2F%2Famazon.com%2F&esheet=52648447&newsitemid=20220405005519&lan=en-US&anchor=Amazon.com&index=5&md5=a93da689fbb4ae050467e0d2c820d8fd) (<https://cts.businesswire.com/ct/CT?id=smartlink&url=http%3A%2F%2Famazon.com%2F&esheet=52648447&newsitemid=20220405005519&lan=en-US&anchor=Amazon.com&index=5&md5=a93da689fbb4ae050467e0d2c820d8fd>) invests in new business opportunities and the timing of those investments, the mix of products and services sold to customers, the mix of net sales derived from products as compared with services, the extent to which we owe income or other taxes, competition, management of growth, potential fluctuations in operating results, international growth and expansion, the outcomes of claims, litigation, government investigations, and other proceedings, fulfillment, sortation, delivery, and data center optimization, risks of inventory management, variability in demand, the degree to which we enter into, maintain, and develop commercial agreements, proposed and completed acquisitions and strategic transactions, payments risks, and risks of fulfillment throughput and productivity. In addition, the global economic climate and additional or unforeseen effects from the global pandemic amplify many of these risks. These risks and uncertainties, as well as other risks and uncertainties that could cause our actual results to differ significantly from management's expectations, are described in greater detail in Amazon.com's filings with the Securities and Exchange Commission ("SEC"), including its most recent Annual Report on Form 10-K and subsequent filings. Although we undertake no obligation to revise or update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law, you are advised to consult any additional disclosures we make in our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K filed with the SEC.

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Media Hotline

Amazon-pr@amazon.com (<mailto:Amazon-pr@amazon.com>).

www.amazon.com/pr (<https://cts.businesswire.com/ct/CT?id=smartlink&url=http%3A%2F%2Fwww.amazon.com%2Fpr&esheet=52648447&newsitemid=20220405005519&lan=en-US&anchor=www.amazon.com%2Fpr&index=6&md5=336850a7914cf6423942fde40dc98f55>).


Source: Amazon.com, Inc.

Your personal data with Telstra remains safe and has not been affected by the recent cyber attacks. [Staying safer online.](#)

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Telstra & OneWeb sign MOU to explore new connectivity solutions in Australia & Asia Pacific

 Joint Media Release, 02 March 2022

Telstra, Australia's leading telecommunications and technology company and OneWeb, the low earth orbit (LEO) satellite communications company, today announced the signing of a Memorandum of Understanding (MoU) to explore new solutions for improved digital connectivity across Australia and the Asia Pacific region.

The non-exclusive agreement brings together Telstra's telecommunications expertise in Australia, and OneWeb's satellite capability to deliver innovative connectivity in the future. The partnership complements Telstra's T25 ambition to grow and extend its network leadership position and boost mobile coverage across the country, in addition to being another key milestone for OneWeb's path to global coverage later in 2022.

Andrew Penn, Chief Executive Officer at Telstra said the partnership reinforces Telstra's ongoing commitment to providing world class communications for regional Australia at a time when investment in expanding digital infrastructure remains a top priority for the country's economic recovery and development post-pandemic.

"We see lots of opportunities for our consumer, small business and enterprise customers using LEO satellite connectivity – from backhaul to back-up for resiliency, from IoT to supporting emergency services, from home broadband to supporting agritech.

"It also opens up opportunities in the wider Asia Pacific region alongside our existing and future operations."

Neil Masterson, Chief Executive Officer at OneWeb said this is great news for communities and businesses across Australia and the Asia Pacific, who can now look forward to high-speed, low latency connectivity from Space.

"Together with Telstra, OneWeb's global LEO network has the power to connect even the most remote parts of the region, and we look to realising our ambition to bringing connectivity to those hardest to reach."

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thirds of its planned fleet, delivering connectivity to customers in remote regions of Alaska, Canada, and the North Sea. Launches will continue during 2022 to enable the company to offer commercial connectivity services globally later this year.

OneWeb and Telstra will work together over the coming months to finalise the detailed scope of the agreement.

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026/2022

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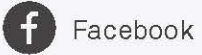


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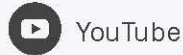
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Telstra and OneWeb move closer to delivering new satellite solutions

 Media Release, 08 September 2022

Telstra and OneWeb are progressing towards building a commercial relationship with testing underway on OneWeb's network of Low Earth Orbit (LEO) satellites.

The joint testing program, which started in the UK on OneWeb's live constellation, has now moved to Australia where use cases that improve connectivity for Telstra's most remote customers will be tested in local conditions.

Telstra and OneWeb have also signed a Letter of Intent to guide their collaboration and will work together over the coming months to finalise the detailed scope of a commercial agreement.

"Telstra is excited to be working with OneWeb to explore new options for providing high-quality and continuous coverage across the country to boost digital connectivity, particularly for communities in remote and regional Australia," Telstra Group Executive, Networks and IT, Nikos Katinakis said.

"LEO satellite connectivity creates lots of interesting opportunities for our consumer, small business and enterprise customers – especially those that require continuous coverage or added redundancy – from backhaul to back-up for resiliency, from IoT to supporting emergency services, from home broadband to supporting agritech.

"We have just signed a Letter of Intent with OneWeb, supporting our intention to work together over the next five to 10 years. We look forward to working towards a long-term strategic agreement."

David Thorn, Vice President, APAC at OneWeb, said the company was pleased to have the opportunity to explore innovative connectivity in partnership with Telstra.

"It's developing relationships like this that make our roles as global technology leaders worthwhile, where Telstra and OneWeb are at the heart of delivering

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the team, and Telstra’s new CEO Vicki Brady, long into the future.”

OneWeb has been building its initial constellation of 648 satellites and has 428 satellites in low earth orbit already. The remaining satellites will be launched over coming months. Services are available in Alaska, Canada, UK and the Arctic region. By late 2023, it will be offering its high-speed, low-latency connectivity services worldwide.

The partnership complements Telstra’s T25 ambition to grow and extend its network leadership position and boost mobile coverage across the country, in addition to being another key milestone for OneWeb’s path to global coverage later in 2023.

- ENDS -

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