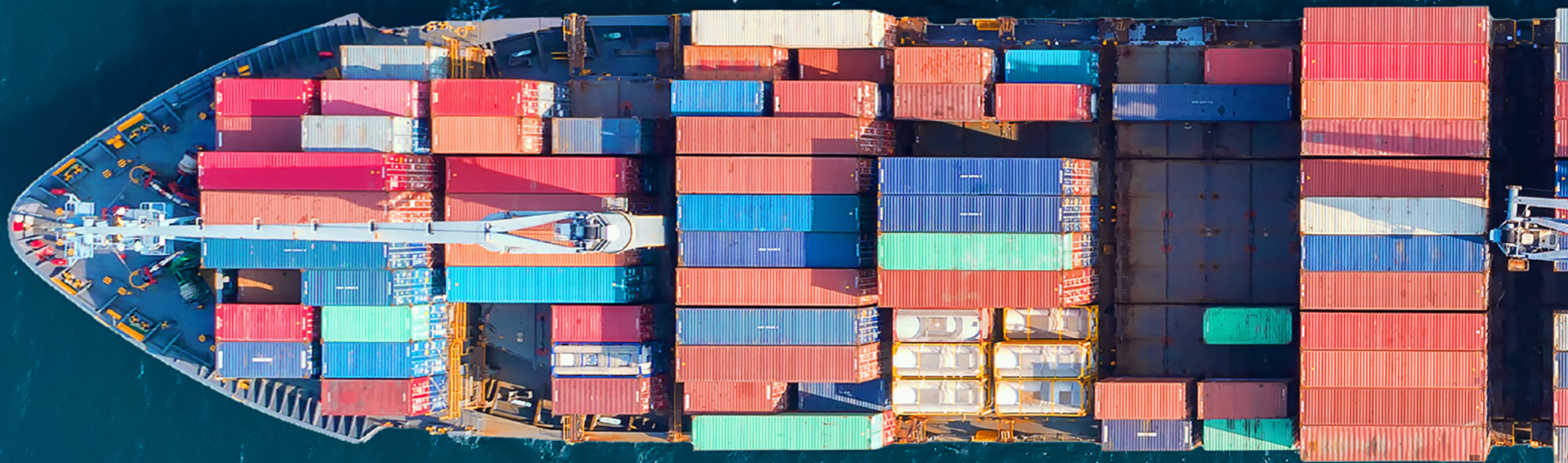OneWeb **Brdy**

Fiber-like connectivity at sea.
Unlocking the maritime digital revolution.

Connect with
OneWeb

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#ResponsibleSpace

OneWeb is building the world's first global communications network in space that will deliver low latency, high-speed connectivity everywhere, for everyone.

One Mission

OneWeb's mission to make a world of difference has made us first-movers in the field of Low Earth Orbit (LEO) satellite telecommunications. Our solutions will shape the world, connecting everywhere to everyone, to help bridge the digital divides that exist so nobody gets left behind.

New Technology

Designed to meet the challenges of the present and requirements of the future our unique suite of connectivity solutions and cutting-edge terminals will enable maritime platforms of all sizes and types to achieve digital transformation in the most cost effective and simplest manner.

Strategic Partnerships

With $3.25bn investment raised to date from multiple blue-chip partners, OneWeb's strategic partnerships with leading industry players is helping the company to realize its vision.

OneWeb

> "The industry generates roughly 100-120 million data points every day, from different sources such as ports and vessel movements."

Meeting the demand for connectivity in the Maritime sector

Until now, the maritime industry has dealt with patchy and inconsistent connectivity, impacting the efficiency, operational safety and overall profitability of the sector.

There is an urgent need to switch from legacy systems to more reliable, fit-for-purpose connectivity services which are; adaptable to evolving technologies, ease regulatory compliance, improve sustainability, enable ships to maximise their operational efficiency and improve crew welfare and safety.

We live in a hyperconnected world with increasingly tech-savvy users who demand high quality internet access on the go, which can only be satisfied by a high throughput, low latency, global network. In the era of digitalization and with the shift to the cloud, reliable and fast communications will not only be viewed as a working tool but will soon be the expectation. Failure to deliver this will have negative consequences on operations, staff welfare and productivity.

OneWeb

Introducing OneWeb Maritime

Our ubiquitous high throughput, low latency connectivity services and innovative applications, will support the digital transformation of a range of key maritime sectors:

Merchant Shipping

For the rapid evolution of ship communications, from bridge alerts, weather warnings and analysis of smart sensors on critical equipment to ultimately operating autonomous vessels, our range of connectivity services will be essential to fleet owners to transform their operations. It will facilitate compliance with increasingly stringent regulations, unlock advanced processes including predictive maintenance, automation, IoT and high-level security measures while empower crew to ensure retention. Our reliable global service is also the first with exceptional capacity in the Arctic, enabling sensitive routes to be regulated.

Offshore

From FPSOs and OSVs to rigs in shallow and deep waters, our flexible products are ideally suited for offshore operators to enjoy greater operational resilience, maximizing production at lower costs in a highly complex industry. Our low-latency network will allow for real-time automation and greater levels of predictive maintenance. This will enable significant levels of offshore operations to be led or managed from onshore, thereby reducing operational costs, while providing end-to-end cyber protection of critical infrastructure.

Cruise

With an increase in the number of smart devices used on board, our premium satellite broadband internet service will provide unparalleled guest satisfaction, allowing users of all age groups to access their favorite applications be it gaming, social media or movie streaming services, as easily as on land. The high-throughput network will power multiple avenues on board, creating a 'city on the sea' that will enhance passenger experience. It will also improve the safety of all on board, through 24/7 real-time deck and equipment monitoring for example. River cruise passengers will equally enjoy their experience due to consistent high-speed connectivity eliminating problems posed by roaming when crossing regional waters.

Superyacht

Our solutions will give customers the freedom to sail across oceans to any region in the world at will, with the guarantee of high performance, reliable connectivity at affordable costs to cater to all needs whilst at sea. The secure network will allow VIPs to carry on with business as usual onboard, without fears of remote hacking. Our sophisticated service can meet varying bandwidth demands for all leisure and operational needs – both for passengers and crew.

Leisure

Our resilient and global high-speed connectivity service will provide all boats with a reliable fall back alternative to terrestrial networks when at sea. Users can expect the same quality throughout their entire journey, whether along the coast or mid-ocean. Our solution will offer owners the luxury to activate plans on demand, instantaneously providing seasonal connectivity options based on usage to eliminate fixed and unexpected costs and making high-quality connectivity accessible to vessels of all sizes.

Ferry

Our dual dome terminal solution with high look angles is ideally suited for ferry routes around the world, enabling uninterrupted high-speed connectivity and supplementing the often-unpredictable terrestrial networks. Operators will have the flexibility to choose among a range of affordable plans based on varying operation and vessel sizes. Passengers will no longer have to be disconnected and can experience reliable internet similarly to how they do on land.

Commercial Fishing

To meet growing demand, fishing fleets are rapidly expanding and require advanced means of tracking catch, reporting activity and submitting the operational and regulatory data required to ensure sustainable fishing practices. More fishing vessels can now experience superior connectivity services – previously accessible only to larger vessels – to support day to day operations, including geo-fencing alerts that protect fishermen at sea.

OneWeb

The New Standard for Maritime Connectivity

The OneWeb system presents a step change in maritime capabilities with its global, low-latency, high-throughput fiber-like services at sea, the only suitable solution to meet the increasingly complex and dynamic needs across of all maritime segments in this era of digital revolution.

Global coverage, consistent experience

Equatorial or polar - the truly global nature of OneWeb's services will ensure seamless connectivity wherever a vessel needs to operate, irrespective of latitude or local land topography, eliminating complexity and removing barriers to the adoption of new, more efficient solutions. OneWeb will also enable connectivity on northern routes (above 60° degrees) that have until now been ignored by existing satellite-based solutions.

Unmatched Low latency unlocks new opportunities

Orbiting at 1200km, our satellites are 30 times closer to Earth than GEO satellites and 8 times closer than those of MEO operators. This allows us to deliver unmatchable low-latency connectivity for maritime businesses, enabling vessels, passengers and crew to access the same tools, and enjoy the same experiences, as when on land. OneWeb will deliver the low latency required by enterprise applications such as Office365, Citrix or Oracle, as well as the real-time IoT-driven analytics applications used in environments such as offshore drilling platforms.

Greater capacity at affordable costs means no more compromises

OneWeb will enable maritime businesses to overcome many of the issues posed by the limitations of current on-board communications, such as real time analysis and transfer of large data and accessibility to the cloud without compromising on the welfare and safety of the crew. OneWeb's affordable pricing means that operators can provide users with unlimited access to social media or live streaming services, without having to worry about excessive costs. For many customers, our solution

OneWeb   Maritime Connectivity Solutions

will offer more than ten times as much data, for the same monthly price as current solutions, with a far superior user-experience thanks to our lower latency high throughput network.

Flexible packages and scalable technology improve agility

OneWeb's flexible commercial packages with predictable cost structures give maritime operators the agility they need to adapt to changing seasonal demands or market conditions, paying only for what they need.

Our scalable technology will support anticipated future growth without the need for expensive and disruptive upgrades.

Portfolio of innovative user terminals to suit every operational budget

OneWeb's family of smart user terminals will provide an economical means to equip every platform type with the best suited hardware to bring a 'fiber-like' experience at sea equivalent to terrestrial broadband.

Easy to deploy, maintain and manage

Our hardware solutions enable an easy 'plug and play' installation and reduced maintenance requirements compared to current solutions. In addition, our digital customer platform will enable customers to flex their consumption commitments up and down to meet changing demands – without tying them to expensive, long-term contracts.

Global network of esteemed partners

OneWeb understands the complexity of the industries it serves and recognizes the need to support and reduce barriers for customers on their digital transformation journeys.

We are working with partners globally to provide; tailored solutions for varied operational needs, the integration and management of evolving technologies with end to end support and training. Our partners will allow operators to focus on their primary mission to pursue more business and achieve operational excellence.

"Only 57% of crew have personal email access and just one third have social media access at sea (34%)."

Source: "The Seafarers' Employment Condition Survey", Danica 2019

OneWeb

Our unique network architecture

Our connectivity system has been developed to provide global coverage with low latency levels, thereby enabling real-time applications for the whole maritime industry. Our communications network will provide a 'fiber-like' experience through resilient, universal and mobile connectivity.

Merchant

Oil & Gas

Leisure

Cruise

Superyacht

Ferry
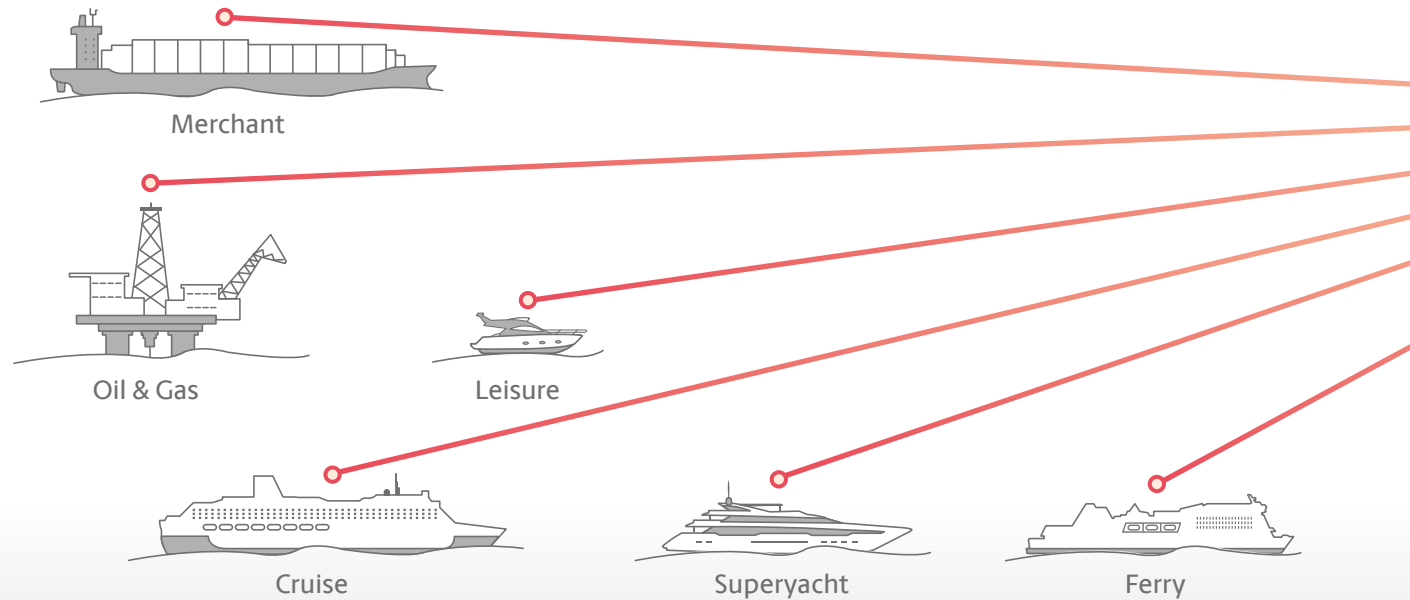
System Performance

Global coverage	99.7% availability
Latency	<50ms - ideal for real time applications
Terminal Download speeds	Up to 195 Mbps
User links	Ku-band
Gateway links	Ka-band

OneWeb | Maritime Connectivity Solutions

Satellites

Our satellites are manufactured by OneWeb Satellites – a joint venture between OneWeb and Airbus Defense and Space, in an industrial-scale high-volume production facility in Florida, US.
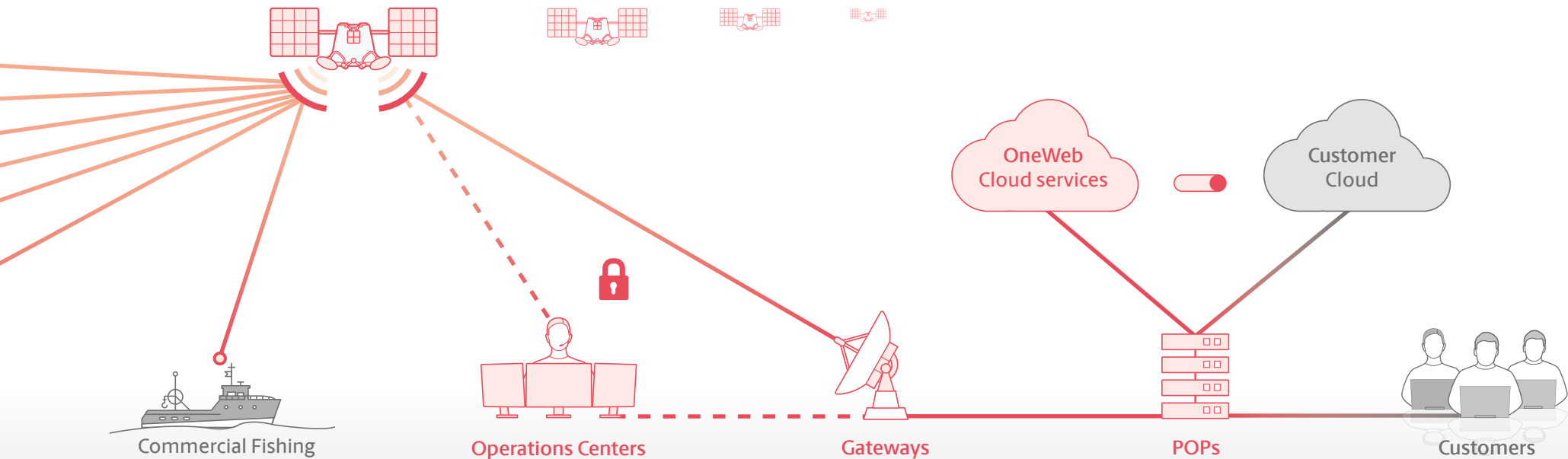
This is the first manufacturing facility to employ high-volume production techniques, enabling dramatically reduced costs and production times in comparison to MEO and GEO satellite manufacturing, allowing the delivery of up to two satellites per day.

Constellation

A constellation of 648 LEO satellites, carefully designed to provide a resilient and sustainable network:

• 648 Low-mass satellites positioned on 12 planes

• 49 satellites per plane with 60 in-orbit spares

• 16 beams

• Beams are 1,600km in longitude and 65km in latitude

• 450 Mbps of forward capacity per beam

• Seamless satellite handoff as location passes from one to another

The OneWeb LEO constellation can also be viewed as a complementary capability to MEO and GEO constellations, with the capability to be integrated into legacy and interconnected networks.

Commercial Fishing   Operations Centers   Gateways   POPs   Customers

OneWeb Cloud services

Customer Cloud

Ground Network

The OneWeb ground network consists of:

- Satellite Network Portals (SNP's) – over 40 SNP's or 'Gateways', will be located around the world, each with the capability of communicating with LEO satellites to enable connection to the Internet via Ka-Band frequency bands. Each Gateway will feature between 7 and 30 Full Motion Antennas on a single site.

- Satellite Operations Centers (SOCs) – 2 SOCs located in London, UK and Virginia, US. SOCs are responsible for the control of ground elements and management of payloads in real-time, the tracking of individual satellites as well as to predict any potential interference from other spacecraft.

- Points of Presence (PoP's) – a global network of PoP's will connect our network to the internet and will be deployed at key Peering Points.

Security

The embedding of security within our system designs and engineering activities ensures secure connectivity is in place from any UT to the internet. Secure communication is the foundation across our access spectrum, service links, gateways, IP Core, global backhaul, data centers and ISP/partner network connectivity.

OneWeb design includes security at the physical layer, including: satellites' movement and user data handover across satellites, use of frequency hopping every few seconds, 3GPP standards-based encryption from UT to the internet, data security at rest and in motion, customer master data and transaction data security, traffic containment and landing in the source country.

We are committed to ensuring appropriate security is in place across all layers of the OneWeb network.

Testing

Comprehensive testing in 2019 showed:

- All 6 satellites delivered Full HD (1080p) streaming video

- Latency of less than 40 milliseconds with speeds of over 400 Mbps

- Our satellites' ability to conduct seamless beam and satellite handovers to sequential spacecraft as well as accurate antenna pointing and tracking

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For all enquries please contact

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