For over 25 years, aviation passengers have come to rely on Inmarsat to connect them when they fly. More CEOs depend on our services than any other. Inmarsat covers 100% of major flight routes and our next generation services, including Jet ConneX, SB-S and the European Aviation Network are redefining every aspect of business travel, with the coverage and capacity to meet an ever-increasing demand for connectivity.

TRULY GLOBAL COVERAGE

Whether flying on the busiest flight routes or to the most remote destinations, Inmarsat offers the most expansive worldwide coverage of any provider. Some connectivity partners provide regional coverage or a patchwork of coverage which they lease from various satellite operators. Inmarsat owns and operates its satellites and ground networks. This added control and visibility allows Inmarsat to guarantee a continuous, consistent experience wherever you fly.

HIGHEST SPEEDS TODAY

Inmarsat’s Jet ConneX delivers the fastest broadband in the skies to business aviation users, providing the sorts of speeds that give travellers a truly 4G experience. SB-S revolutionises bandwidth to the cockpit, delivering speeds that are orders of magnitude faster than the current standard.

THE MOST RELIABLE NETWORK

Inmarsat has been operating the most reliable mobile satellite communications network for over 35 years. A fully redundant ground infrastructure providing over 98% availability for Jet ConneX and better than 99.9% availability for SwiftBroadband services.

PREPARED FOR FUTURE DEMAND

Demand for data will continue to grow. Inevitably, so will the capacity of our networks. A fully funded pathway will bring regional depth to existing global coverage, ensuring we meet the needs of business aviation customers today and long into the future.

THE BEST CONNECTIONS COME FROM EXPERIENCE

For the first time ever, global, reliable, high-speed wi-fi is available to Business Aviation. In a data-driven world, staying connected is a necessity, whenever and where you fly.

Inmarsat delivers an in-the-air broadband experience comparable to an on-the-ground broadband connection. Broadband that allows passengers to join a video conference while over the Atlantic, catch the latest market reports, download tomorrow’s presentation from the company server – or just kick back and stream the game live.

In the cockpit, connectivity delivers real-time weather updates for more efficient flight routing and crystal clear voice channels for air traffic communication.

Inmarsat’s suite of advanced connectivity services make today’s connected business aircraft a more productive, efficient and safer way to fly.

### SERVICES

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<tr>
<td>Global Xpress (1-5) Launch</td>
<td>4th GX Satellite launch</td>
<td>EAN Network Launch</td>
<td>I-6 (Ka and L-band) High Intensity Spot Beam Satellite Launch</td>
<td>Next Generation GX – 5x increase in throughput</td>
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<th>HARDWARE</th>
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<td>JetWave system</td>
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<td>Core Portal and e-commerce engine</td>
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This is a notional roadmap and does not represent a guarantee of service. Inmarsat retains the right to adjust scheduled activity without notice.
FASTEST BROADBAND IN THE SKY FOR BUSINESS AVIATION

Jet ConneX

Our latest business aviation service offers passengers the highest speed and most extensive coverage of flight routes available to the market. Jet ConneX is the first worldwide Ka-band network available to business aviation. The Jet ConneX service delivers a reliable, uninterrupted, high quality wi-fi experience wherever you fly, providing data speeds capable of supporting video-streaming. Voice over IP (VoIP), live TV, file transfer and VPN. Just about everything that makes business fast moving down here, moves just as fast at 40,000ft with Jet ConneX.

<table>
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<tr>
<th>Application</th>
<th>Bandwidth</th>
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<tr>
<td>Voice over IP (VoIP)</td>
<td>28 to 64Kbps / 0.028 to 0.064Mbps</td>
</tr>
<tr>
<td>Internet / Email</td>
<td>256 to 400Kbps / 0.256 to 0.4Mbps</td>
</tr>
<tr>
<td>PED Video Conferencing</td>
<td>300 to 700Kbps / 0.3 to 0.7Mbps</td>
</tr>
<tr>
<td>HD Video / YouTube Streaming</td>
<td>500 to 2000Kbps / 0.5 to 2Mbps</td>
</tr>
<tr>
<td>1080p Video Streaming</td>
<td>3000 to 6000Kbps / 3 to 6Mbps</td>
</tr>
</tbody>
</table>

Bandwidth consumption varies according to the specific application being used and all apps do not perform the same. Streaming video apps are especially unique in their bandwidth usage. These values are indicative guidelines only, please consult your service provider for specific details.

GLOBAL COVERAGE - GUARANTEED

Jet ConneX is powered by Inmarsat’s Global Xpress network. Each of its four I-5 satellites operates 89 highly efficient Ka-band spot beams. A foundation layer of global coverage, capable of providing up to 50Mbps to fuselage mounted, and 30Mbps to tail mounted antennae. Capacity is supplemented by the network’s 24 unique steerable beams, which direct additional capacity and are three times as powerful as the spot beams, to busy airspace during peak traffic periods.

During the second half of 2019, we’ll launch our GX-5 satellite to add further coverage. This will be followed by two I-6 satellites that will add further depth to regions of highest demand.

Jet ConneX is the only business aviation solution to offer a guaranteed data rate globally. As data requirements rise, upgradeable bandwidth, at a low cost per MB, give you the flexibility to adapt to changing needs and maximize the return on your investment.

JET CONNEX - THE FIRST KA-BAND SERVICE TO SPAN THE GLOBE

Jet ConneX: GLOBAL COVERAGE

- 5-F1 INDIAN OCEAN REGION
- 5-F2 ATLANTIC OCEAN REGION
- 5-F3 PACIFIC OCEAN REGION
- 5-F4

JET CONNEX SERVICE PROVIDERS

Our global network of Service Providers offers tailored service plans on a monthly subscription basis, as well as 24/7 technical support, billing and value-added services to help manage usage and optimise bandwidth.

Rockwell Collins/ARINC Direct: arincdirect.com  
Satcom Direct: satcomdirect.com  
Honeywell GoDirect: aerospace.honeywell.com/godirect  
Sita OnAir: sitaonair.aero

This map depicts Inmarsat’s expected coverage following the commercial introduction of Inmarsat-5 F4 (I-5 F4). The position of I-5 F4 shown in this map is indicative only. This map does not represent a guarantee of service. 2017.
UNRIVALLED RELIABILITY AND AVAILABILITY

The Global Xpress network is supported by a completely redundant ground infrastructure, ensuring network availability of 98% or greater. Each satellite has two ground stations to guarantee reliable communication with the satellites. Operational control is maintained with redundant Satellite Control and Network Operations Centres, owned and operated exclusively by Inmarsat.

STATE OF THE ART JETWAVE TERMINALS

The lightweight JetWave MCS 8X00 system is offered exclusively from Honeywell. The system consists of four major components: an antenna controller to accurately point the antenna to the satellite, an RF unit to blast the data through space, a modem to process the incoming and outgoing data, and either a fuselage or tail mounted antenna to direct the data to and from the satellite. Supplemental Type Certificates (STC) already exist for over 30 aircraft from all leading manufacturers and over 10 more STCs are in progress, including:

- **Airbus:** A310, A319, A320, A321, A330/A340
- **Boeing:** B737-700, B737-800, B747-400, B757, B767-300, B767, B777, B787
- **Gulfstream:** G650, G600, G550, G500, G450, G3, G4, G5
- **Bombardier:** Global 5000/6000, Global 7000/8000, Challenger 604/605, Challenger 650
- **Dassault:** Falcon 7X, Falcon 8X, Falcon 900, Falcon 2000

**Airbus Aircraft Compatibility**

- A310, A319, A320, A321, A330/A340

**Boeing Aircraft Compatibility**

- B737-700, B737-800, B747-400, B757, B767-300, B767, B777, B787

**Gulfstream Aircraft Compatibility**

- G650, G600, G550, G500, G450, G3, G4, G5

**Bombardier Aircraft Compatibility**

- Global 5000/6000, Global 7000/8000, Challenger 604/605, Challenger 650

**Dassault Aircraft Compatibility**

- Falcon 7X, Falcon 8X, Falcon 900, Falcon 2000
SWIFTBROADBAND, PROVEN L-BAND GLOBAL COVERAGE

Our global network of Service Providers offer tailored service plans including pay as you go options, as well as custom applications, 24/7 technical support, billing and other value-added services to help manage usage and optimise bandwidth.

Rockwell Collins/ARINC Direct: arincdirect.com
Satcom Direct: satcomdirect.com
Honeywell GoDirect: aerospace.honeywell.com/godirect
Sita OnAir: sitaonair.aero

This map depicts Inmarsat’s expectations of coverage. The availability of service at the edge of coverage areas fluctuates depending on various conditions.

SwiftBroadband is flying on over 4,000 aircraft worldwide. A multi-channel solution delivered through a single installation. The service comfortably supports text, high quality voice calls, email, internet access and mobile data applications anywhere in the world.

TRUSTED, GLOBAL, L-BAND RELIABILITY

SwiftBroadband operates over Inmarsat’s I-4 L-band satellite constellation, covering all major aviation routes, and every hidden island getaway, worldwide. It’s a network aviation has relied on since 2009, with the redundancy and resilience to guarantee greater than 99% availability across 100% of its coverage. Each L-band satellite combines 228 spot beams with 19 wide beams. A High Gain Antenna system is capable of achieving up to 432Kbps background IP to an individual channel from a spot beam and up to 650Kbps streaming. Up to four channels can be bonded to increase the achievable speeds by four.

In 2015, Alphasat was launched into orbit to complement capacity of the three original I-4 satellites. One of the I-4 satellites has been strategically relocated to provide redundant capacity over the busiest third of the I-4 coverage area. In 2020, two additional regional L-band payloads (I-6) are scheduled for launch.

A RANGE OF SOLUTIONS TO MEET VARIED REQUIREMENTS

SwiftBroadband offers three primary antenna options to suit differing aircraft and bandwidth requirements.

HIGH GAIN ANTENNA (HGA) – 432Kbps
SwiftBroadband HGA can support up to four channels per aircraft for simultaneous voice and data services. Always-on data up to 432kbps per channel, HDR data rates up to 650kbps on demand, and full-channel streaming with SwiftBroadband X-Stream are three different data services offered on the SwiftBroadband network. A range of terminal equipment is available from Cobham, Honeywell, Rockwell Collins and Thales.

INTERMEDIATE GAIN ANTENNA (IGA) – 332Kbps
SwiftBroadband IGA combines high quality voice communications with a symmetric, background data connection of up to 332kbps per channel. Up to four channels per aircraft for concurrent voice and data links, with the ability to add four more VoIP connections with each. A range of guaranteed data rates can be also selected up to 128kbps, and up to 500kbps with HDR. A range of terminal equipment is available from Cobham, Honeywell, Rockwell Collins and Thales.

LOW GAIN ANTENNA (LGA) – 200Kbps
A single channel system supporting high quality voice, plus always-on data at up to 200kbps per channel and guaranteed rates of 8, 16 and 32kbps via a low gain antenna. Terminals available from Cobham and Honeywell.
THE EUROPEAN AVIATION NETWORK
Scheduled for commercial service in 2018 for Airlines and 2019 for Business Aviation, the European Aviation Network will be the world’s first integrated connectivity solution to combine advanced satellite technology with a complementary air-to-ground network. Developed in partnership with Deutsche Telekom, the new network was specifically engineered to meet the challenges of delivering reliable, high-speed broadband to Europe’s busy skies.

A UNIQUE APPROACH FOR COVERAGE AND SPEED
The European Aviation Network provides integrated coverage of over 50Gbps capacity across 30 European countries. Inmarsat’s custom-designed, multi-beam, S-band satellite is paired with approximately 300 LTE cellular towers, each with a baseline range of around 90km. Handover from tower-to-tower, and between satellite and ground sources, is managed seamlessly on board, with no interruption to the service.

FLEXIBLE AND SCALABLE
Designed to grow capacity to match accelerating demand, the network’s cellular architecture makes it simple to scale. Bandwidth multiplies rapidly by increasing the number and density of towers. Additional capacity is made available for busier routes and/or the network can react quickly to rising demand.

MAKING BUSIER SKIES A SAFER PLACE TO FLY
Inmarsat has been the pioneer in air traffic control and aircraft safety services for over 25 years. We work closely with regional and international regulators to develop services and applications that drive safety standards forward.

CLASSIC AERONAUTICAL SERVICES
Our existing Classic Aero services are the most widely used flight deck satellite communications solutions for business and commercial aviation worldwide, meeting ICAO standards and enabling FANS operations on over 95% of the world’s transoceanic flights. Available as standard fit from all major business jet manufacturers with service via our established Service Providers, Classic Aero is available over high and intermediate gain antennas.

SWIFTBROADBAND-SAFETY
SB-S is our next generation flight deck communications platform offering global, high-speed, secure, IP connectivity for the cockpit. Always on and always secure, it delivers a new world of flight deck applications that deliver safety, efficiency, and operational performance benefits for aircraft.

The IP connection means you can use your existing SBB network for safety services such as two channels of crystal clear voice communication, ACARS data supporting FANS 1/A and a prioritised IP link for new cockpit applications like Electronic Flight Bag. All at speeds ten times faster than existing safety service links and utilizing the Inmarsat I-4 L-band constellation with better than 99.99% network availability.
Inmarsat hardware solutions are available as line fit options with every major business jet manufacturer. Our global network of service providers offers tailored service plans to meet varied bandwidth demands and budgets, as well as value-added services to help manage usage and optimise bandwidth.

For further information about our services, please contact:
Michael Rack
Michael.Rack@inmarsat.com
Or visit inmarsataviation.com

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