inmarsat
The mobile satellite company™

SwiftBroadband

High-speed, IP-based voice and data

SwiftBroadband is an IP-based packet-switched service that provides asymmetric 'always-on' data connection through single or multi-channel systems.

Data

In Standard IP mode, the system provides a service of up to 4 simultaneous channels of up to 432kbps per channel to the aircraft. SwiftBroadband can also provide a pre-determined quality of service through dynamically assigned streaming classes of 8, 16, 32, 64 or 128kbps which can be combined to achieve higher data throughput or through the X-stream service which offer full channel streaming of more than 250kbps.

Multiple streaming classes can be used concurrently with the Standard IP service. Higher bandwidth can be achieved by combining up to four channels per aircraft and through the use of performance-enhancing technologies such as data compression, IP and application optimisation.

For backward compatibility, SwiftBroadband also provides a circuit-switched ISDN service.

Voice

SwiftBroadband provides a high-quality voice service with the full functionality of terrestrial fixed phone services. Each SwiftBroadband channel provides a circuit switched voice channel to the aircraft. Using multi voice functionality, systems will be able to provide three additional (Standard multi voice) or eight (Enhanced multi voice) voice lines on a best effort basis.

All voice services can be used in parallel with a combination of packet switched data services.

System Features

All SwiftBroadband systems allow for simultaneous voice and IP data communication over low profile antennae that are significantly smaller and lighter than any other systems in the market:

High gain antenna >9.5kg

- Four channels of up to 432kbps each
- Dynamic IP streaming 8, 16, 32, 64 or 128kbps (combined to a maximum of 192kbps per channel)
- X-stream full channel streaming of more than 250kbps.
- Circuit-switched voice and multi voice VoIP
- Standalone or simultaneous operation with
- Inmarsat Aero H+ services
- Compliant with ARINC 781

Intermediate gain antenna >3.5kg

- Four channels up to 332kbps each
- Dynamic IP streaming 8, 16, 32, 64 or 128kbps (combined to a maximum of 160kbps per channel)
- Circuit-switched voice and multi voice VoIP
- Compliant with ARINC 781

SwiftBroadband 200 >0.7kg

- Low gain blade antenna
- Single channel of up to 200kbps
- Dynamic IP streaming 8 or 16 kbps
- Circuit-switched voice and up to 3 multi voice VoIP
- Stand alone system
- Small and compact avionics

Requirements

- SwiftBroadband avionics
- An aircraft antenna and related equipment capable of receiving SwiftBroadband.
- An agreement with a SwiftBroadband service provider

Aircraft without an Inmarsat system

- For new aircraft, airframe manufacturers can advise if SwiftBroadband avionics are an option either as SFE or BFE.
- For aircraft already in use, SwiftBroadband avionics manufacturers can advise on recommended equipment and STC status.

Upgrading an existing Inmarsat installation

- SwiftBroadband can be obtained through a software or hardware upgrade depending on the equipment already installed on the aircraft.
- Consultation with the relevant avionics and antenna manufacturers is necessary to establish which upgrade path is appropriate for each particular aircraft configuration.

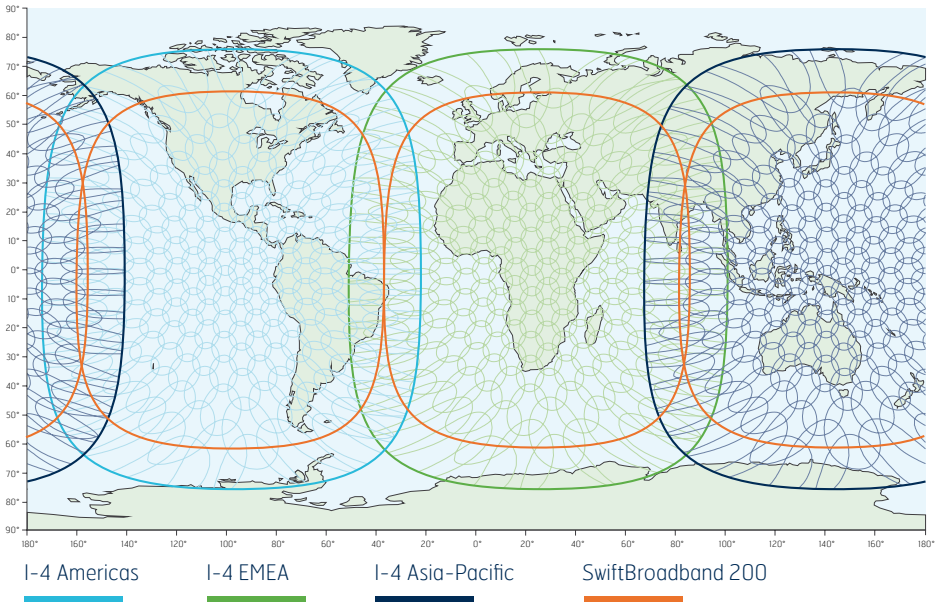
Future developments

Inmarsat is constantly developing our offering, both technically and commercially to ensure it meets our customers changing needs. The following SwiftBroadband developments are underway, currently expected to be available at the beginning of 2014:

- SwiftBroadband Safety Services
  ICAO approved Safety Services using SwiftBroadband
- Helicopter waveforms
  Improved signal coding which improves performance and reduces data packet loss when transmitting through the rotors of a helicopter
- High Data Rate Bearers
  Increased streaming data throughput to 700kbps/ channel (max two channels/ aircraft)
- SB200 Evolution
  Global coverage using the small footprint SB200 system and blade antenna, allowing service down to 5 degrees elevation angle

Coverage

SwiftBroadband uses the narrow spot beams of the Inmarsat-4 (I-4) satellites. It is available globally, except the extreme polar regions.



The map depicts Inmarsat's expectations of coverage, but does not represent a guarantee of service. The availability of service at the edge of coverage areas fluctuates depending on various conditions.

Applications

SwiftBroadband supports a wide range of crew and passenger applications:

Cockpit

- Safety services – ACARS, ADS, CPDLC
- Voice communications
- Electronic Flight Bag, flight plan, weather and chart updates

Cabin

- WiFi or wired connectivity
- In-seat and mobile phone, VoIP and text messaging
- Email, intranet, internet and instant messaging
- Secure VPN access
- Videoconferencing
- IFE content and news updates

Operational applications

- Aircraft performance monitoring and fault reporting for major systems
- General operational planning
- Scheduling and route planning
- Aircraft tracking
- Crew reporting and general administration
- CRM/FFP

Secure communications

SwiftBroadband supports high-assurance applications, including NATO secret and NSA Type-1 encryption systems providing remote mobile access to classified networks – STU-III/IIb, STE, KIV-7, Brent and HAIPE devices including KG-175 TACLANE, KG-235 Sectéra, KG-250 Altasec, subject to verification testing.

How to buy

For contact details of avionics manufacturers and service providers see 'How to buy' section at: www.inmarsat.com/aviation

inmarsat.com/aviation