INMARSAT

FACTS

Inmarsat's family of satellites

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Inmarsat delivers global mobile satellite communications services via its own Inmarsat-2 and Inmarsat-3 satellites.

The satellites are deployed to cover the entire globe except the poles:

Atlantic Ocean Region - West (AOR-W)
Operational: Inmarsat-3 F4 (54W)
Spare: Inmarsat-2 F2 (98W) and Inmarsat-3 F2 (15.5W)

Atlantic Ocean Region - East (AOR-E)
Operational: Inmarsat-3 F2 (15.5W)
Spare: Inmarsat-3 F5 (25E) and Inmarsat-3 F4 (54W)

Indian Ocean Region (IOR)
Operational: Inmarsat-3 F1 (64E)
Spare: Inmarsat-2 F3 (65E)

Pacific Ocean Region (POR)
Operational: Inmarsat-3 F3 (178E)
Spare: Inmarsat-2 F1 (179E)

Satellites Carrying Leased Services
Inmarsat -2 F2 (98W)
Inmarsat-3 F5 (25E)
Inmarsat-2 F4 (109E)

INMARSAT-2

Inmarsat operates a total of four Inmarsat-2 satellites. Launched in 1990-92, they each have a capacity equivalent to about 250 Inmarsat-A voice circuits.

The spacecraft were built by an international consortium headed by British Aerospace. Subcontractors included Hughes Aircraft Company (USA), Fokker (Netherlands), Matra (France), MBB (Germany), NEC (Japan) and Spar (Canada). Satellite ground control operations contractors included CLTC (China), CNES (France), SED (Canada), Telespazio (Italy) and Intelsat.

The Inmarsat-2s are three-axis-stabilised spacecraft based on the Matra/BAe Eurostar platform. With a ten-year design life, each satellite had a 1,300kg launch mass, reducing to an initial 800kg in orbit. Initial power rating was 1,200W.

The communications payload comprises two transponders supporting satellite-to-mobile (service) links in L-band (1.6GHz uplink, 1.5GHz downlink) and satellite-to-earth station (feeder) links in C-band (6.4GHz uplink, 3.6GHz downlink). Effective L-band isotropic radiated power (EIRP) is 39dBW. Each satellite's global beam covers roughly one-third of the earth's surface.

The first Inmarsat-2 was launched aboard a McDonnell Douglas Delta vehicle on October 30, 1990. The second was launched on March 8, 1991, also by Delta. Inmarsat-2 F3 and F4 were orbited by Ariane 4 on December 16, 1991, and April 15, 1992, respectively.

In a unique arrangement, Inmarsat has leased the first three satellites from the North Sea Marine Leasing Company. This company is the leasing partnership of the four major United Kingdom banks: National Westminster, Barclays, Lloyds and HSBC. The arrangement was guaranteed by the European Investment Bank and the Club of European Long Term Credit Institutions.

INMARSAT-3

Inmarsat has introduced a constellation of five third-generation satellites. The Inmarsat-3s use the latest spot-beam technology and higher power to supply voice and data communications services worldwide to mobile terminals as small as pocket-size messaging units on ships, aircraft and vehicles.

Inmarsat-3 development was carried out by prime contractor Lockheed Martin and payload provider Matra Marconi Space. With an end-of-life power rating of 2,800W, each Inmarsat-3 can deliver an EIRP of up to 48dBW — eight times

the Inmarsat-2 level — in L-band. It can dynamically reallocate both RF power and bandwidth among a global beam and five spot beams, allowing greater reuse of the available spectrum. Simultaneous voice channel capacity is up to eight times the Inmarsat 2-figure.

Each Inmarsat-3 also carries a navigation transponder designed to enhance the accuracy, availability and integrity of the GPS and Glonass satellite navigation systems.

Inmarsat-3 F1 was launched by Atlas IIA on April 4, 1996, from Cape Canaveral, Florida. It is now in service over the Indian Ocean. Inmarsat-3 F2 was lofted into orbit by a Russian Proton from Baikonur Cosmodrome on September 6, 1996, and took over as the Atlantic Ocean East primary satellite a month later. F3 was launched by Atlas on December 18, 1996, and entered service over the Pacific on January 25, 1997. F4 was launched by Ariane from the Guiana Space Centre on June 6 and entered service on July 26, 1997 over Atlantic Ocean West. F5 was launched February 3 1998 by Ariane 4 at French Guiana.

LEASED SERVICES

In order to meet an increasing demand for leased services, from July 1, 1999, Inmarsat is offering additional lease capacity on three of its satellites.

These satellites are: Inmarsat-2 F2, at 98W; Inmarsat-2 F4, at 109E, and Inmarsat-3 F5, at 25E.

Both Inmarsat-2 F2 and Inmarsat-3 F5 will serve as spares to the Inmarsat-3 network.

POST-INMARSAT-3

Definition of Inmarsat's post-third-generation space segment is in progress.

For further information about Inmarsat's family of satellites, please contact:

Inmarsat's web site:
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