Mobile Satellite Broadband Global Networks

FCC Broadband Task Force Workshop: Global Broadband Connects America and the World: Infrastructure, Services and Applications
December 10, 2009

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# Inmarsat's Global Broadband Network

- 11 geostationary satellites in orbit today using L-Band

- Three 4th Generation satellites operational

  - Commercial life 2020+

  - 193 spot beams per satellite

- Flexible power allocation (hot spots)
  - Satellite capacity can be redeployed real-time to service areas of high demand

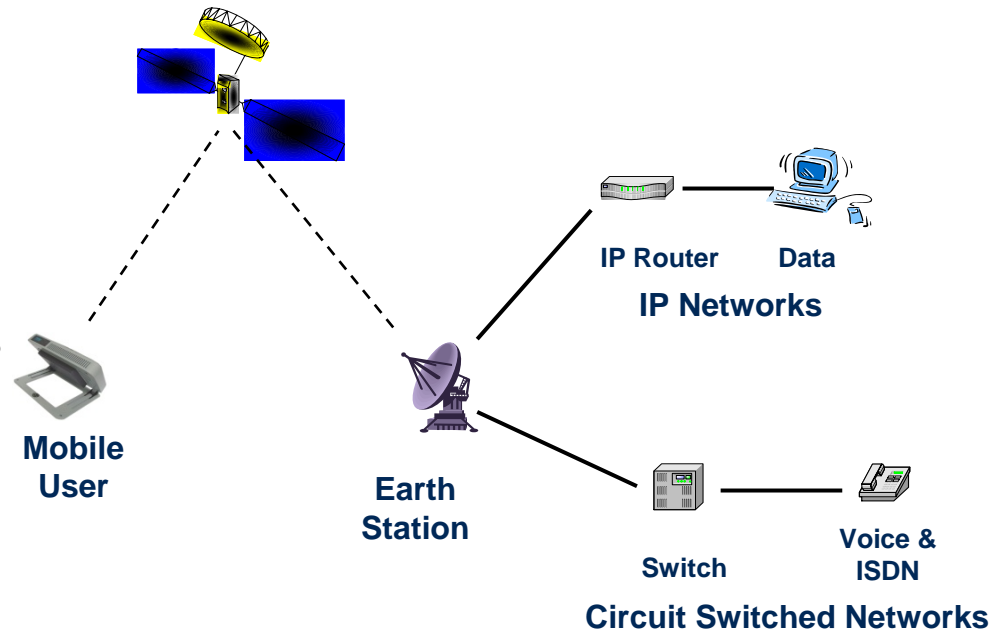- 100 satellite years without operational failure - 99.99% network availability

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BGAN coverage

I-4 Americas   I-4 EMEA   I-4 Asia-Pacific
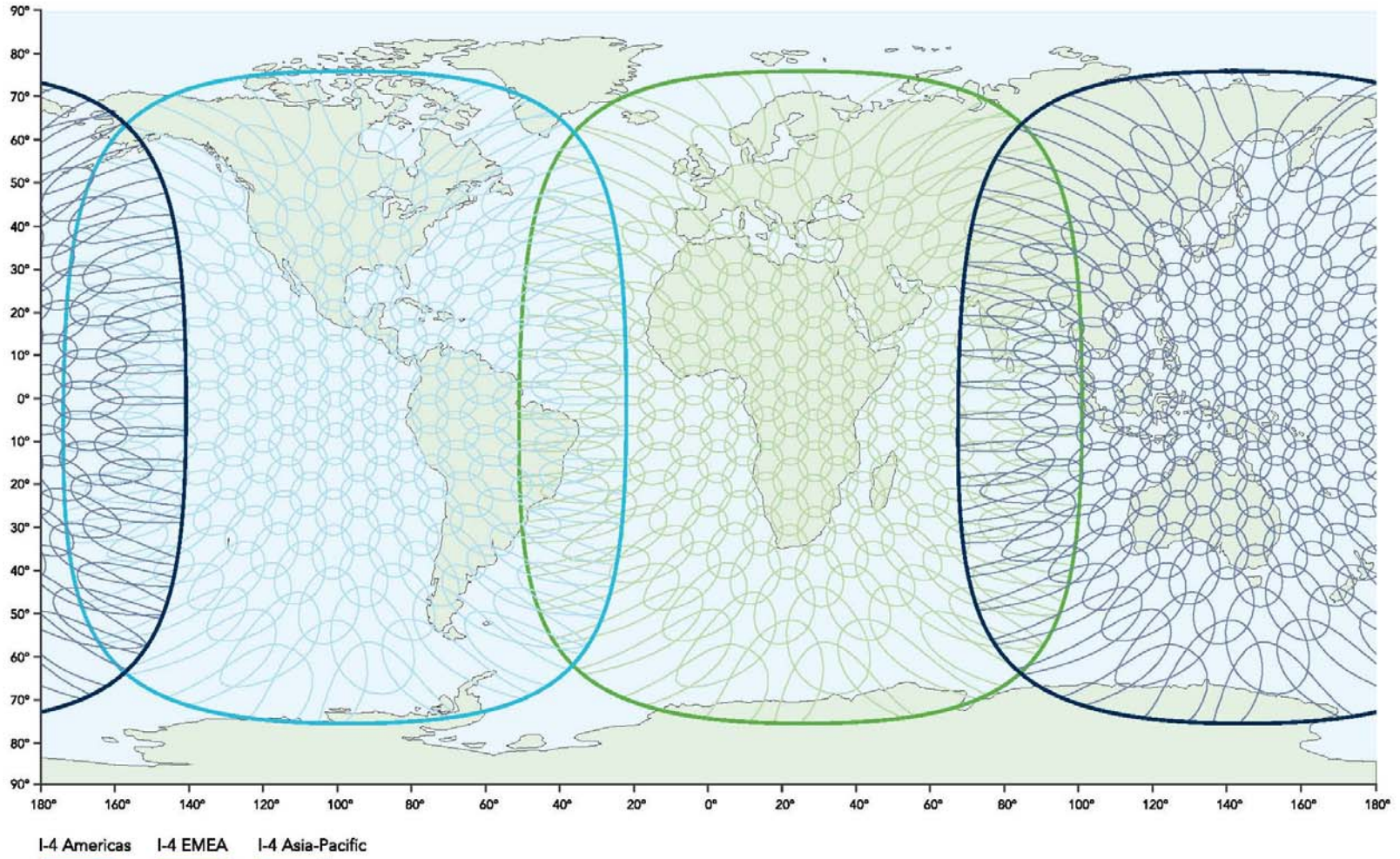
This map depicts Inmarsat's expectations of coverage, but does not represent a guarantee of service.
The availability of service at the edge of coverage areas fluctuates depending on various conditions.
BGAN spot beam coverage February 2009.

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Broadband Global Area Network (BGAN) Services

- High-speed Broadband data (up to 492kbps in both directions), with built-in WiFi LAN extension

- … plus low-cost voice

- accessible simultaneously

- through a single, compact device

- with on-demand guaranteed data rates

- available worldwide

Mobile User

Earth Station

IP Router **Data**

IP Networks

Switch **Voice & ISDN**

Circuit Switched Networks

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Core Business

Maritime	Land	Aeronautical

Maritime
- High-speed data
- Voice
- GMDSS global safety service

Land
- High-speed data
- Voice
- Videophone used by media worldwide

Aeronautical
- High-speed data
- Voice
- Cockpit communications
- Cabin passenger voice and data (outside of U.S.)
- ICAO compliant safety services provider

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Mission Critical Applications to Diverse Users

- International relief agencies (International Red Cross, Télécoms Sans Frontières, United Nations, FEMA, etc)

- U.S. Government (wherever deployed), including DoD, (Army, Navy, Air Force) DHS (Coast Guard, Border Patrol)

- Media (CNN, NBC, Reuters, etc)

- Critical Infrastructure (oil, gas, electricity, etc)

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BGAN Uses: Humanitarian Relief, Remote Activities, Commercial

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Mobile Satellite Broadband Can Deliver:

➡ Worldwide coverage with ubiquitous network and products

- Same interface globally
- Land, sea, and air mobile services, including safety services for maritime and aeronautical users
- Mobile broadband network available anytime, anywhere

➡ Small portable devices that are easily set up and online

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Mobile Satellite Broadband Can Support:

● **Public Safety and Disaster Response**
- Emergency preparedness
- Disaster relief communications when terrestrial networks fail
- Restore and backhaul terrestrial communications (pico cell provides IP connectivity for LMR and mobile phones)

● **Telemedicine**
- Ambulances: perform lifesaving procedures and diagnostic tests in the field or 'on the move'
- Mobile clinics: deliver primary and specialty care in rural communities
- Hospice and homecare: access to electronic medical records and support

● **National Security and Defense**
- DoD relies on commercial satellites in the U.S. and throughout the world

● **Critical Infrastructure support**

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Challenges for Mobile Satellite Broadband

To provide ubiquitous, cost-effective worldwide connectivity, satellites need:

> Globally harmonized, consistent spectrum allocations

> Sufficient spectrum to meet growing capacity demands, coordinated internationally

> Predictable - and not unduly burdensome - national regulatory and licensing frameworks

> Reasonable fees based on regulatory costs

> Conditions that will facilitate access to capital to finance "up front" costs of constructing and launching satellites

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