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Iridium Satellite LLC

Emergency Communications

November 24, 2008

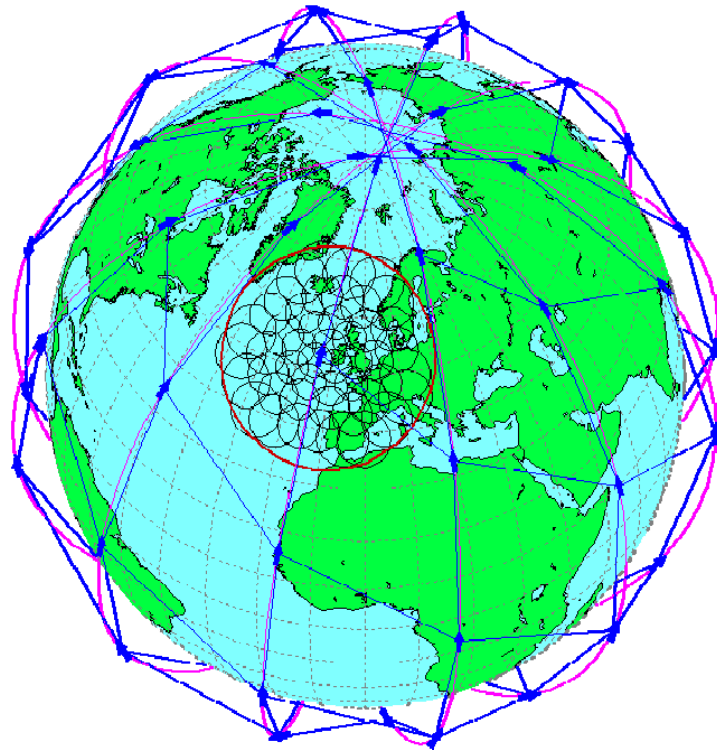
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Iridium - Global network providing unique capabilities



- Truly ubiquitous coverage
- 66 satellite polar-orbiting constellation
- Independent of terrestrial infrastructure
- Communications routed over inter-satellite links
- Uninterrupted by impact of natural disasters
- Iridium constellation in excellent health
- First-time connection rate exceeds 99%
 - Frost and Sullivan study

Iridium Call Routing

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Iridium Network Services

- Services available:
 - Mobile voice (handheld and vehicle mounted)
 - Fixed voice (single and multi-line)
 - E-mail
 - Asset tracking and reporting
 - Mobile-to-mobile, mobile-to-PSTN and PSTN-to-mobile
- Interoperable with other technologies e.g., VHF, UHF, other satellite systems, cellular, etc.
- All services operate totally independent of any reliance on electrical power, regional towers or connections to local terrestrial communications

Equipment Configurations

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Multi-Channel
Fixed Service



Handheld



Vehicular Mount and
Docking Stations



A variety of fixed
antenna options



Solar Chargers

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Historical Usage of Iridium for Disaster Recovery

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- Taiwan Earthquake (1999)
- South Pole rescue (2001)
- September 11 (2001)
- Asian Tsunami (2004)
 - Reopened Northern Sri Lanka communications to assist relief efforts
 - Temporary authority to operate in Pakistan in support of the crisis
- Hurricane Season in US and Caribbean (2005, 2008)
- Pakistan Earthquake (2005)
- China Earthquake (2008)



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Cycle of Events





User Profiles

- Varied backgrounds and professions
 - Professionals and volunteers
 - Medical personnel, utility workers, landscape staff, etc
 - Corporate representatives e.g., insurance claim agents, construction supply companies, etc.
- Unlikely to prepare in advance
 - Delayed availability of funding
- Typically unfamiliar with satellite communications
- Will operate in challenging environment
 - Substandard accommodations
 - Will deal with affected people
 - Not a place to read a users guide



Service Requirements

- **Service survivability and reliability**
 - Must work when nothing else does
- **Ready accessibility**
 - Advance deployment
- **Mobility**
 - All phases of rescue, recovery and reconstruction
- **Ease-of-use**
 - No special training required
- **Ubiquitous coverage**
 - Must work when/where needed
- **Uniform operation**
 - Consistency of dialing in both directions



First Responder Applications

- Search and rescue
- Damage assessment reporting
- Relief supply logistics support
- Coordination of rescue efforts
- Facilitating communications between survivors and family members



Sales Facilitators

- Short term equipment rental programs
 - Including ruggedized packaging, solar chargers, etc.
- Rapid deployment capability
 - Including both equipment deployment and activations
- Advance establishment of ordering agreements
 - Establishes customer credit/billing, points of contact, ordering procedures, etc.
- Advance and repetitious user training
 - Personnel churn



Improvement Opportunities

- User education – solution choices
 - Multiple systems available
 - Specific capabilities
 - Varied requirements (over time, between tasks)
- Equipment pre-positioning
 - Network operators, service providers, users
- User training
 - e.g. dialing, “line-of-sight”
- Application adoption
 - e.g. tracking, monitoring
- Interoperability
 - Wide variety of systems employed



Conclusions

- Disasters can occur at any time and anywhere
- Only system capable of providing service anywhere in the world
- Instantly available when relief workers first arrive on-site
- Throughout recovery period, Iridium service is available on both a mobile and fixed basis
- Iridium equipment readily available -- rental and purchase
- Complements longer term, less mobile solutions