Critical Communications: Preparedness and Options

Ensuring Resilience in Times of Crisis

Andy Cool – All Over Communications

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All Over Communications Bio

Principal – Bill Perkoski

- Started Company in 1990 in the Cellular space
- Branched out into SatComms in 1999
- Became one of the largest Globalstar distributors
- Aligned with multiple partners as distributor for Iridium, Viasat/Inmarsat and Starlink
- Company has targeted and specialized in emergency preparedness, disaster recovery, and business continuity for over 20 years

Andy Cool – VP Operations

- Began in the SatComms space in 1996
- Worked for network operator AMSC
- Recruited by Equipment manufacturer
- Worked subsequently on the service side with 3 different companies before starting own business in 2003
- Sold business in 2019
- Contract ended in 2024

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Why Critical Communications Matter

- Emergencies disrupt conventional communication channels
  - Natural disasters
  - Cyberattacks
  - Power outages
- Lives, infrastructure, and operations depend on reliable communications

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Key Objectives of Critical Communication

- Maintain situational awareness
- Coordinate emergency response
- Inform the public and stakeholders
- Ensure continuity of operations

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Preparedness Essentials

- Risk assessment and scenario planning
- Redundant communication systems
- Staff training and drills
- Clear protocols and escalation paths

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Communication Options Overview

Option	Description	Pros	Cons
Landline & Mobile	Traditional voice and SMS	Widely available	Vulnerable to outages
Satellite Phones/internet	Iridium, Inmarsat, Starlink	Bypasses terrestrial Infrastructure/networks	Line of sight, cost vs. terrestrial services
Radio Systems (VHF/UFH)	Used by first responders	Reliable, long-range	Requires licensing/training
Internet messaging	Email, apps, VoIP	Fast, multimedia capable	Must have internet access
Mass notification tools	Automated alerts to groups	Efficient, scalable	Setup and maintenance required.

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Building a Resilient Communication Plan

- Identify critical stakeholders
- Choose diverse comms tools
  - Fiber
  - LTE/5G
  - Radio
  - Satellite – Fixed and “take away”
- Establish backup power
  - Generator/Batteries
- Test systems regularly

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Satellite Options

- ✓ Iridium
- ✓ Viasat/Inmarsat
- ✓ Starlink

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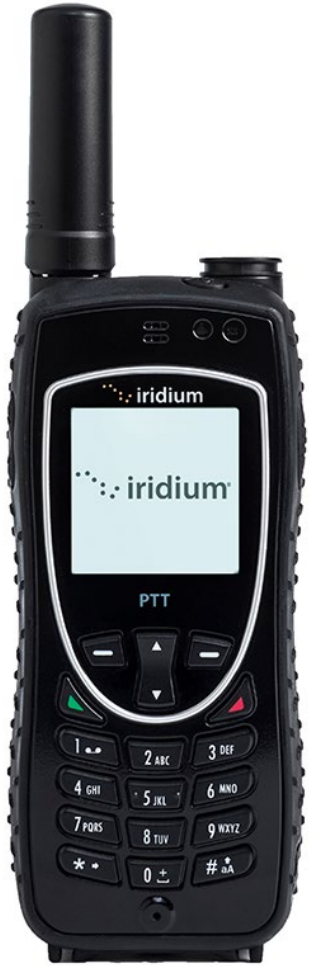
Satellite Options – Iridium

- **Network Overview**
  - 66 cross-linked Low Earth Orbit (LEO) satellites
  - True global coverage, including poles
- **Strengths**
  - Highly reliable voice & low-latency messaging
  - Mission-critical push-to-talk (PTT) solutions
  - Ability to dynamically allocate resources to a given geography
- **Limitations**
  - Narrowband data (up to 704 Kbps on Certus 700)
- **Ideal Use Cases**
  - Voice/text in extreme environments
  - Emergency preparedness

Iridium 9575 Extreme



Weight: 8.7 ounces
Jet-water resistant
Shock resistant
Dustproof
Battery: 4 hrs. talk; 30 hrs. standby
Tracking modem built in
MSRP: $1595
PTT model available

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Iridium PTT

9575 PTT
Voice and PTT
capable
MSRP: $1,695

ICOM IC-SAT100
PTT only $1,295

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Iridium GO!

Weight 10.4 ounces
Wi-Fi to smartphone via GO! app
Voice and text (up to 1,000 characters)
Jet-water resistant
Shock resistant
Dust proof
Battery: 4 hrs. talk; 30 hrs. standby
No real data horsepower (2.4kbps)
MSRP $995

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Iridium GO! exec

Weight 2.64 lbs.
Wi-Fi to smartphone via GO! exec app
Voice, text and data (88kbps)
IP 65
MSRP $1,595

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Iridium 9555

Weight 9.4 ounces
Basic voice and text
No GPS receiver
Battery: 4 hrs. talk; 30 hrs. standby
More delicate than the 9575
MSRP $1,200

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Satellite Options – Viasat/Inmarsat

- **Network Overview**
  - Geostationary Earth Orbit (GEO) satellites
  - Global coverage except polar extremes
- **Strengths**
  - High reliability & consistent service quality
  - Wide range of portable & fixed terminals
- **Limitations**
  - Higher latency (~600 ms typical GEO delay)
  - Larger terminal antennas for higher speeds
- **Ideal Use Cases**
  - Emergency Preparedness
  - Land-based high-uptime voice/data for remote/emergency operations

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Inmarsat IsatPhone 2

Weight 11.2 ounces
Basic voice and text
GPS enabled
Battery: 8 hrs. talk; 160 hrs. standby
Extremely rugged
Transflective display
MSRP $995

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Satellite Options – Starlink

- **Network Overview**
  - Large constellation of LEO satellites
  - Expanding global coverage
- **Strengths**
  - High throughput broadband (~50–250 Mbps)
  - Priority plans ensure availability
  - Low latency (~25–50 ms)
  - Mobility solutions (maritime, RV, aviation)
- **Limitations**
  - Requires more power than handheld satphones
  - Hardware size – not ultra portable
- **Ideal Use Cases**
  - High-bandwidth remote operations
  - Field HQ for emergency response
  - Streaming/video conferencing in remote sites

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Starlink Flat High Performance

- Fastest Device offered by Starlink
- Data Speeds of up to 220Mbps down
- Multiple mounting options
- Longer cable runs available
- Can be integrated into existing networks with automatic failover
- Includes Wedge Mount and 82’ cable
- MSRP: $2,500

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Starlink Mini

- Smallest Device offered by Starlink
- Data Speeds of up to 120Mbps down
- WiFi router built into device
- Takeaway/mobile use best option
- Can be operated on battery power
- Mag mount for in motion vehicular use
- MSRP: $599/$1,299 with case kit

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Satellite Options – Comparison

Feature	Iridium	Inmarsat	Starlink
Orbit Type	LEO	GEO	LEO
Global Coverage	Yes	Nearly	Mostly
Latency	~30 ms	~600 ms	~30–50 ms
Data Speed Range	kbps	kbps–Mbps	Mbps
Mobility	Excellent	Good	Good/Fair
Power Requirements	Low	Moderate	Higher

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The All Over Communications Advantage

- Local US Numbers
- Flexible Plans
- Free Incoming Calls

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