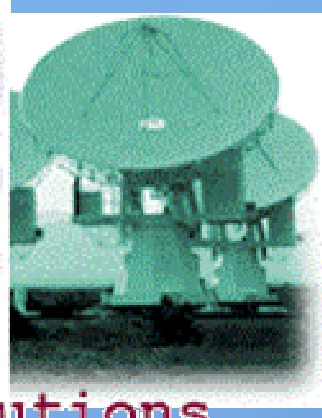


Emergency Communication System for First Responders

www.tti-wireless.com



Paging and Wireless Solutions

9/11 Public Discourse Project*

- If terrorists strike again on American soil, it will be local emergency responders-police, firefighters, and EMT's-who will answer the call.
- What we learned in our investigation is that first responders did not have the communications they needed or deserved.
- So many people were trying to speak at once the transmissions overlapped and often became indecipherable.
- At 9:59 a general evacuation order was issued for the North Tower. Some did not receive the order over their radios, but were alerted in person. **Others never received the order at all.** Many firefighters in the North Tower did not even know the South Tower had collapsed for 30 minutes.
- As we learned in our investigation, the quality of communication varied from agency to agency. But radio communications and operational coordination between the agencies was uniformly a problem.

9/11 and post Katrina Conclusions*

- Hurricane Katrina reminds us that this problem has not been resolved. Poor communications delayed emergency response. Poor communications again cost lives.
- New Orleans and three neighboring parishes were using different equipment and different frequencies-they couldn't talk to each other.
- Helicopter crews couldn't talk to rescuers in boats.
- National Guard commanders in Mississippi had to use human couriers to carry messages.
- After Katrina, communications for first responders must become an urgent priority. We should not have to learn these lessons a **third time.**

*Excerpts from a prepared statement of Timothy J. Roemer before the Subcommittee on Telecommunications and the Internet Committee on Energy and Commerce US House of Representatives September 29, 2005

TOPOFF Findings

- We learned that communications between agencies – at the state, federal, local and private sector levels – is too bureaucratic and takes too long.” Acting Governor Codey
- When TOPOFF ended on April 8, state officials watching the event called the overall effort a success, despite problems throughout New Jersey with communications between government agencies. APP 4/18/05
- As for communications, which involves over 50 municipalities with their own police, fire, first aid, and OEM communication systems, the county has been trying to develop a more singular system since Sept. 11, 2001, First Assistant Prosecutor Robert A. Honecker said. APP 4/18/05 regarding Monmouth County communications

How TTI Can Help

- Group notifications of any size, in under 20 seconds.
- Unlimited number of groups –OEM, HAZMAT, FIRE, DHS, DoD, Bio-terror, police, SWAT- including the ability for an individual to be in multiple groups.
- No dependency on commercial providers. You own and control the critical communications system.
- Elimination of dead-spots commonly associated with commercial carriers.
- Fully scalable, grow the system as needs dictate.
- Full reports and traffic logs, including records that calls were received.
- AES 128-bit encryption for secure messaging.
- Email both to and from the device keeps users in touch for both routine and emergency communications.
- GSA contract holder for ease of procurement and reduced government pricing.

Device Options



- Full text messages on large easy to read display.
- Single button push canned responses such as “On Route,” “On Scene,” “Unavailable,” and “Mutual Aid Needed” provide instant information back to the dispatcher.
- Lexan housing offers rugged protection.
- Optional amplified charger provides an amplified alert and optional printer interface for hard copy of messages.
- Full QWERTY keyboard pagers available for Officers and Incident Commanders.

Personnel Response Management

- Read receipts and canned responses allow dispatchers to better manage personnel and resources responding to designated calls.
- Each group or individual call can be independently managed. Quick views on the dispatch console, or via email receipts, will show individual status of all team members, allowing escalation/mutual aid in the event not enough manpower is available.
- Dispatchers can quickly provide up to the minute manpower updates to incident commanders in the field. Commanders can respond directly from their device to request additional allocation of resources and personnel. Staffing decisions can even be made prior to arrival at the scene.

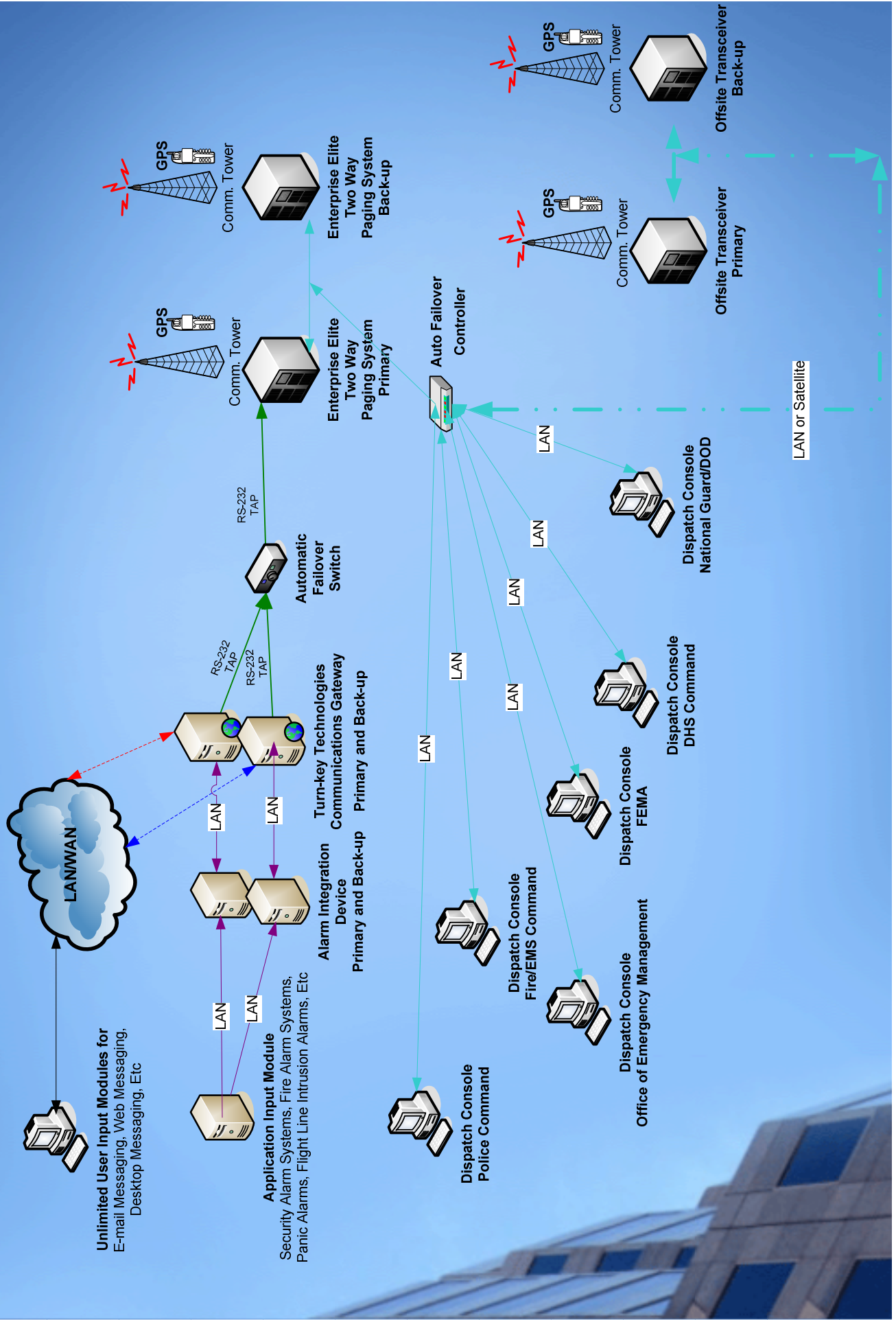
MULTI-AGENCY INTEROPERABILITY COMMUNICATIONS

- Allows communications across multiple agencies and departments on a wholly owned and controlled two-way communications platform.
- Inter-agency communications can be initiated from a console/dispatch location, through an email gateway, a web portal, or directly from a device in the field.
- Personnel can communicate directly with federal, state, county, municipal, and private sector personnel, and receive direct responses.
- Field requests for HAZMAT, CERT, SART, SWAT, EMS, FAST, RIT, Water Rescue, MEDIVAC, Medical Examiner, Public Works, Public Utilities and more can be sent directly from the incident commander on scene to dispatch, or, to any of the teams above, directly from the device.
- Call logs provide complete audit trail of both outgoing, and incoming messages.

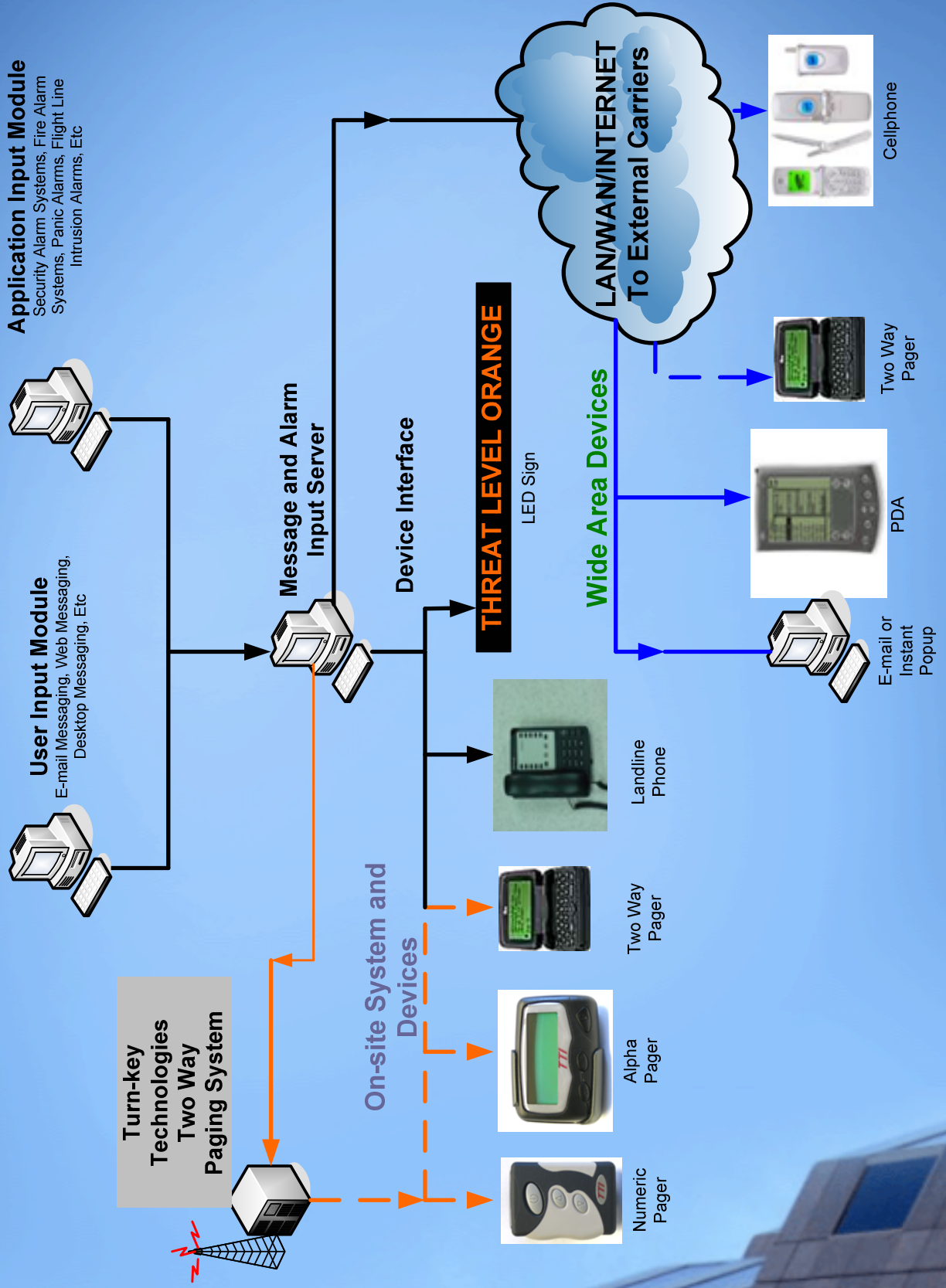
Additional Features

- Optional integration into console software for NCIC lookups directly from the device.
- Option to roam off of private system onto a national carrier for nationwide coverage, while still carrying a single device. (Monthly airtime charges apply)
- Optional vehicle and asset tracking.
- Remote triggering for garage doors, traffic lights, station lights, sirens, etc.
- Ability to roam onto other county/state networks that share the same Enterprise Elite infrastructure.
- Field deployable/mobile command post systems available.

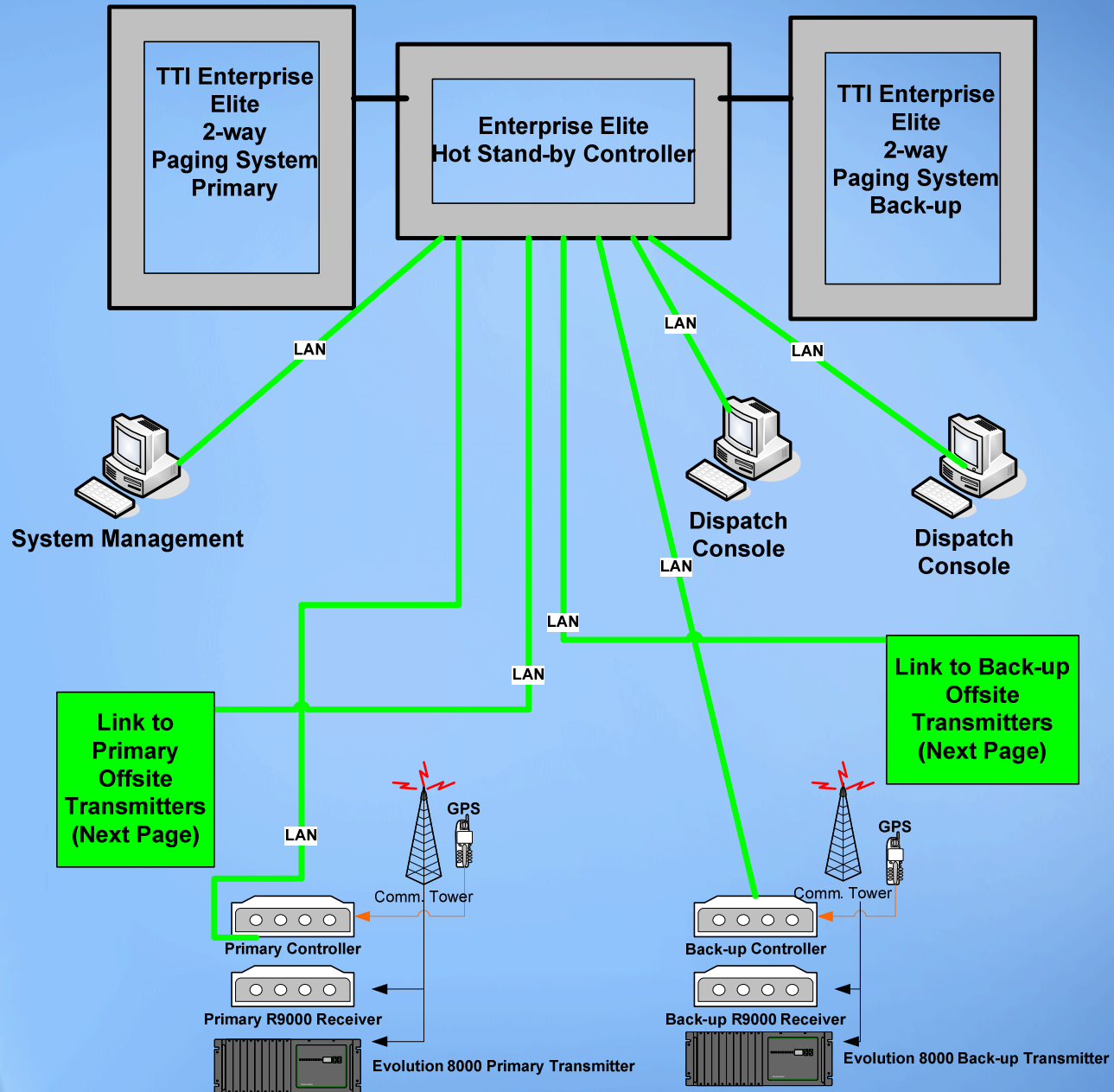
Network Enhanced Two Way On-site Radio Messaging System



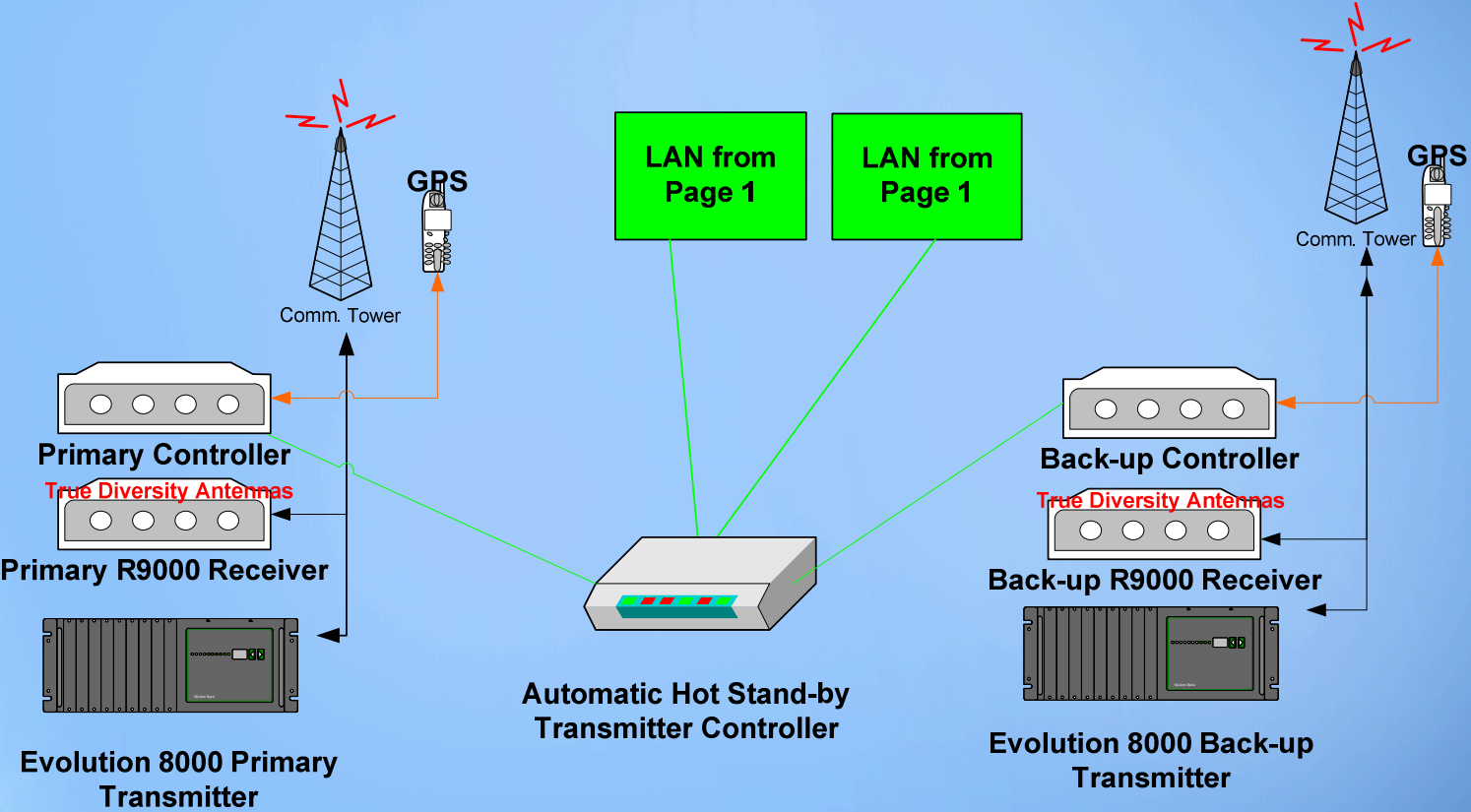
Network Enhanced Two Way On-site Radio Messaging System



MAIN SITE



2 Way Transmitter Site



Balloon Based Rapid Deployment Communications

- Wireless transceivers carried aloft on weather balloons at 65K to 80K feet
 - 60-yr history of National Weather Service launches
 - Launched ~ twice per day
 - Platforms drift “freely” with GPS tracking
- Standard wireless protocols
 - ReFLEX™ 2.7 (messaging technology)
- Fixed and mobile end user equipment
 - Telemetry, tracking and messaging
- Uses Narrowband PCS (NPCS) 1.7 MHz of nationwide spectrum in 901 – 940 MHz Band (Lease rates may apply)



Emergency Deployable System

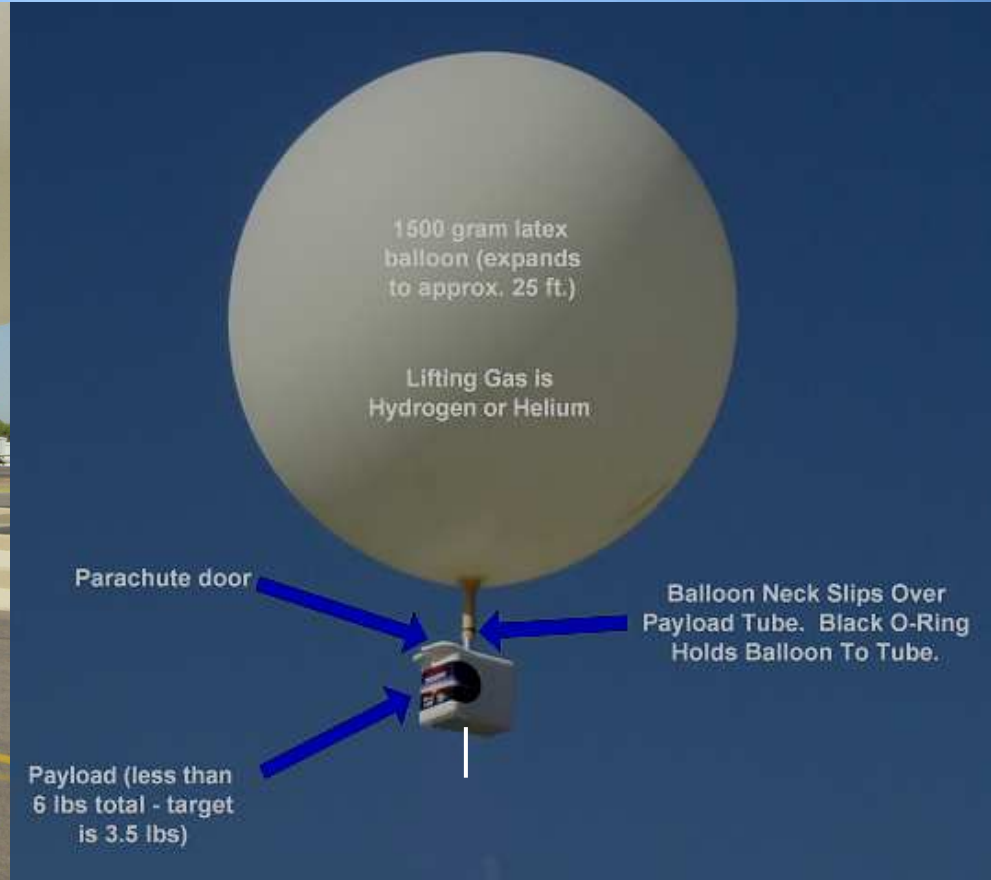
- **Deployable Platform**

- Developed internally by TTI partner. Seamless integration into Enterprise Elite terrestrial system.
- Balloon and payload includes communications, control electronics, power and components to provide wireless communications.
- Utilizes DSP technology enabling programming of various communications protocols onto Deployable Platform.
- Coverage footprint up to 400 miles across per balloon.

- **Ground Facilities**

- Includes remote tracking stations, launch stations, and associated telecommunications to link balloon transmissions to Enterprise Elite or the NOC.
- Ground facilities are distributed throughout coverage area and are spaced roughly 360 to 420 miles apart.

Deployable Platform



Optional Location Services

Asset Tracking, Telematics & Fleet Management

- Where is your mobile asset?
 - GPS (Global Positioning System) technology for tracking vehicle location and speed.
 - TTI Locator products gather and transmit GPS and other data.
 - TTI Network Location Services deliver location information from vehicle or asset.
- What is that asset doing?
 - An easy-to-use Web-based application for customers to locate assets and get reports.

Fleet Management

- First Responder Vehicles
- Supply Vehicles
- Utility Trucks
- Transport Tractors
- Heavy Equipment
- Untethered Applications
 - Portable pumps and generators
 - Other high value packages
 - Trailers



Vehicle and Asset Tracking

- Asset Location and Mapping
 - Find the location of any vehicle or of the entire fleet
 - View the route history (“snail trail”) of a vehicle and/or entire fleet of vehicles
 - Locate the vehicle that’s closest to a specific location



Sample Vehicle History

Selected Asset
Test Account #1

Asset Details
 Phone No: 15003064132
 Date/Time: 2005-06-17 20:05:03
 Location: (-86.683,33.610)
 Speed: 11.162 mph
 Heading: N
 Address: 908 SPRINGVILLE RD
 CENTER POINT, AL 35235

Timestamp Color Legend

- ◆ Black = Location Update
- ◆ Red = Stop Alert
- ◆ Green = Start Alert
- ◆ Blue = Ignition On Alert
- ◆ Purple = Ignition Off Alert
- ◆ Line-through = Invalid

Asset List

[Map All](#)

- Asset List
- Test Account #1 (ID=A)
 - 2005-06-17
 - 06:00 PM
 - 04:00 PM
 - 03:00 PM

Layers Legend Key Map Bookmarks Create PDF Exit

Map Legend

- Detailed United State Boundaries
- Detailed Roads AK
 - Limited Access Freeway
 - Highway
 - Secondary Road
 - Ramp
 - Local Road
 - 4WD Tract
 - Minor Road
 - Walkway
 - Alley
- Detailed Roads AL
 - Limited Access Freeway
 - Highway
 - Secondary Road
 - Ramp
 - Local Road
 - 4WD Tract
 - Minor Road
 - Walkway
 - Alley
- Detailed Roads AZ
 - Limited Access Freeway
 - Highway
 - Secondary Road
 - Ramp
 - Local Road
 - 4WD Tract
 - Minor Road
 - Walkway
 - Alley
- Detailed Roads CA
 - Limited Access Freeway
 - Highway
 - Secondary Road
 - Ramp
 - Local Road
 - 4WD Tract
 - Minor Road
 - Walkway
 - Alley
- Detailed Roads CO
 - Limited Access Freeway
 - Highway
 - Secondary Road

Fleet/Asset Alerts

- Over speed
 - Know when a driver exceeds a predetermined speed
- Geofence arrival / departure
 - Know when a vehicle has entered or exited a pre-defined area such as a yard
- Start / Stop
 - Know when a vehicle's ignition has been turned on or shut off
- Extended inactivity / extended idle
- Off-hours movement
- Custom alerts
 - Use available inputs on TTI Locator products to measure temperature, trailer empty/full, door open/closed, vibration and many others