Mobile Computing Technology and Applications

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Agenda

- Trends & Challenges
- Why Go Mobile?
- Public Safety Solutions
- Fleet & Asset Management Solutions
- Disaster Recovery/COOP Communications
- Integrated GSM/Satellite Solutions

What is driving demand?

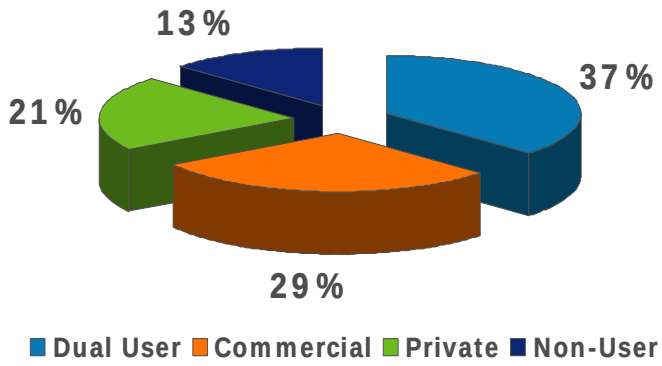
Trends & Challenges:

- Interoperability among federal, state, and local government agencies
- Budget cuts and business process improvement
- Secure communications between first responders
- Business clients and citizens

Current Wireless Data Usage

According to 2007 AT&T research, 79% of first responder agencies surveyed used some form of wireless data with the majority using a commercial provider either as a stand-alone network or as a complement to their private network.

Wireless Data Use	% use
Database Access (NCIC, DMV, etc.)	50%
Dispatch	49%
Report Filing	29%
Internet Access	18%
Instant Messaging	16%
Automatic Ticketing	16%
E-mail	15%
Fingerprint/Mug Shot Transmission	6%
Streaming Video	2%
General Communication/Talking	2%
Other	10%



Source: AT&T Survey of First Responder Agencies, October 2007;
Source Data: Public Safety Information Bureau; n=702

Why go mobile?

- Improve decision making in the field
- Increase productivity and efficiency
- Communicate more securely and across jurisdictions
- Better response to citizens' needs

Mobile Solutions: Public Safety

Wireless Enablement:

In-vehicle hardware and hand held devices connected to AT&T 3G network help first responders gain efficiencies in handling emergencies.

Benefits:

- Improve efficiencies and reduce operating costs.
- Create interoperability among local and regional law enforcement systems
- Enable faster retrieval of criminal and DMV records
- Move time-consuming manual processes and forms to electronic, online format

Dispatch

Records Inquiry

Mobile Citation

Mobile Solutions: Public Safety

Wireless Technology in Action – Courts and Law Enforcement Management Information System

"The primary goal was to provide horsepower to officers on the street. The wireless network has allowed us to fulfill a vision of preventing crime, solving crime, and providing life-saving services." ~**Troy Police Chief Charles T. Craft, chair of the CLEMIS Advisory Board**

Size: 7400 Officers

Business Need

Immediate, dependable access to vital public safety information to solve crime and provide lifesaving services for the community.

Mobile Solution

AT&T 3G wireless network facilitates computer-aided dispatch (CAD) and dramatically speeds access to drivers license photos, criminal histories, stolen property reports and more.

Business Value

70% time savings – the equivalent of putting 700 full-time officers on the street.

Mobile Solutions: Fleet & Asset Management

Wireless Enablement:

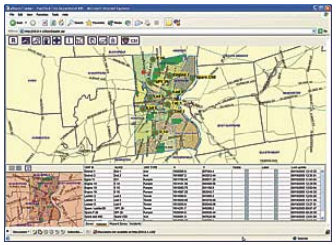
Combined with GPS equipped hardware, AT&T's wireless wide-area networks help emergency responders officials keep track of their valuable fleet and assets.

Benefits:

- GPS and other mapping capabilities equip dispatchers with a better understanding of available resources.
- Mobile technology can be integrated with existing CAD systems enabling more rapid dispatch and the ability to provide on-scene responders with up-to-the minute situational awareness.
- Mobile solutions help to facilitate on-board engine and vehicle diagnostics.

GIS Data

Vehicle tracking



Vehicle Maintenance

Mobile Solutions: Fleet & Asset Management

Wireless Technology in Action – Hartford, Connecticut Fire Department

"Mobile technology gives us much more critical information, and delivers it far faster. It can spell the difference between life and death for the people of Hartford and for our firefighters." **Chief Charles Teale, Hartford Fire Department.**

Size: 400 firefighters, 12 fire stations, 22,000 calls per year

Business Need

Real-time access to critical building, location, and resource information at the scene of a fire.

Mobile Solution

Mobile Geographic Information System (GIS) accessible through wireless-enabled in-vehicle laptops, operating over the AT&T network.

Business Value

More comprehensive information on site; better decision-making and deployment of equipment; greater safety for firefighters and the community.

AT&T Disaster Response Process

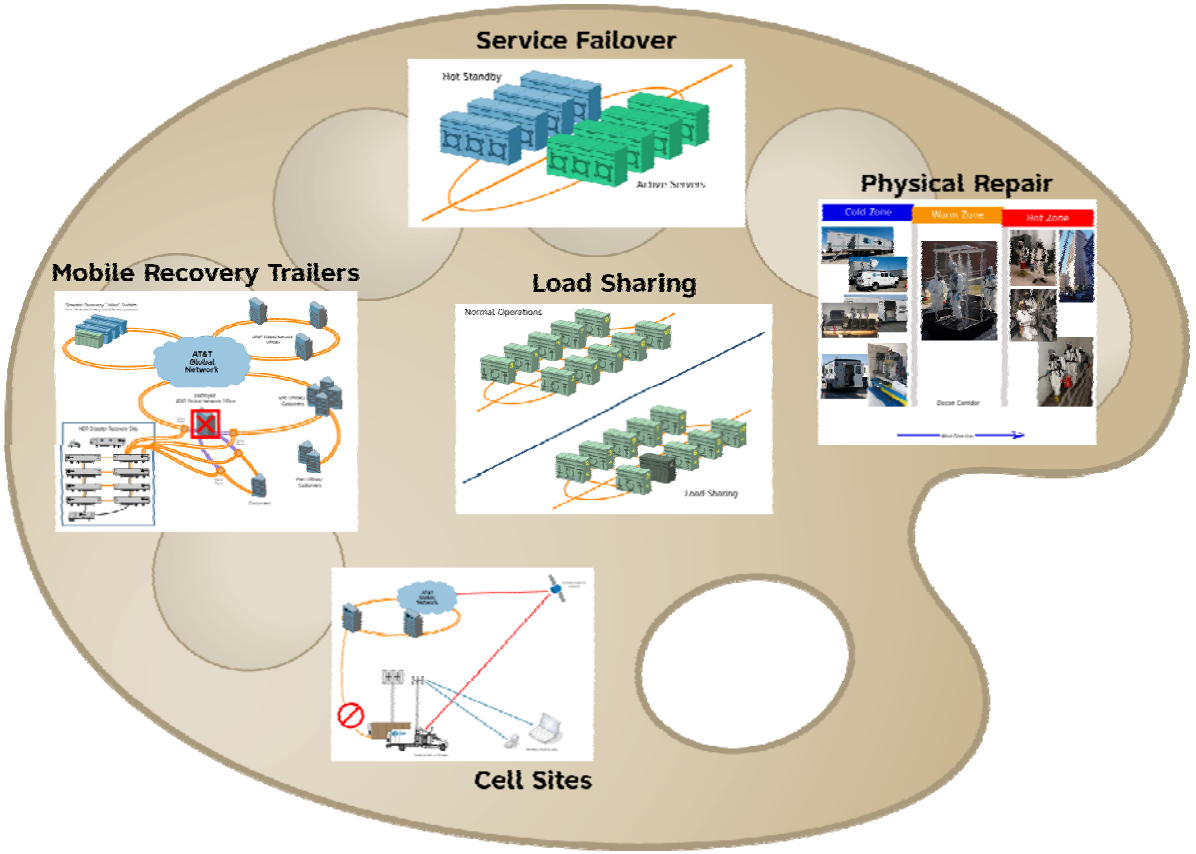
The condition of AT&T's global network is continually monitored in our Global Network Operations Center (GNOC). When an anomaly occurs that threatens or actually impacts the performance of our network, the response is managed by the GNOC staff through a practiced and proven incident command process called 3CP (Command, Control, and Communications).

The incident command team is led by a Network Duty Officer in the GNOC, a role that is staffed around the clock, every day of the year. The GNOC coordinates the network incident response across AT&T organizations, assessing the impact of the event in near-real time and prioritizing the restoration efforts.

In response to a catastrophic event, the GNOC would activate AT&T's Network Disaster Recovery Team and would monitor its response.

AT&T Network Continuity Recovery Palette

AT&T has a variety of recovery alternatives to choose from when responding to a disaster that impacts its network.



Hurricane Ike Wireless Recovery

A Satellite COLT in service on the Bolivar Peninsula, east of Galveston Island, on September 20, 2008. The peninsula was heavily damaged by Hurricane Ike's landfall a week earlier

Satellite COLT providing emergency communications at Galveston's UTMB hospital. NDR and local technicians set up a satellite COLT and configured it so that all radios and sectors were covering the hospital directly providing voice and EDGE data.

Satellite COLT in service at Galveston High School where the Texas Dept of Public Safety had their EOC established for the island.

Mobile Solutions: Evacuation Tracking

Wireless Technology in Action – State of Texas Emergency Management

"We live in a 72 hour world, from decision to evacuation. By 36 hours, we want departure hubs set up, personnel trained, links made, equipment ready, and transportation deployed. With TX SNETS, we control the event, the event does not control us." **Chief Jack Colley, Governor's Division of Emergency Management**

Business Need

Improve mass evacuation procedures during a crisis situation.

Mobile Solution

A wireless evacuee tracking system that integrates handheld computers with Geographic Information System (GIS) databases with status and tracking displays, barcode wristbands and Radio Frequency Identification (RFID) scanners, tracking software, and state vehicles equipped with mobile Global Position System (GPS).

Business Value

State employees better equipped to monitor evacuees', respond to inquiries from the public about the safety of evacuated family members and to reunite families that have been separated during a large-scale disaster.

Mobile Solutions: Integrated GSM/Satellite

Wireless Enablement

AT&T is partnering with TerreStar Networks (TSN) to deliver 3G voice + data on AT&T network and satellite voice and data on satellite network as a roaming option.

Benefits:

- One phone, one number with true available-anywhere service in CONUS or up to 200 miles offshore.
- Use “lowest-cost” routing – choose terrestrial voice network or satellite network.
- Built-in QoS on satellite enables prioritization of government/first responder users.
- In emergency scenarios, spot beam bandwidth allocations can be adjusted to provide capacity where needed.

*Available 2009

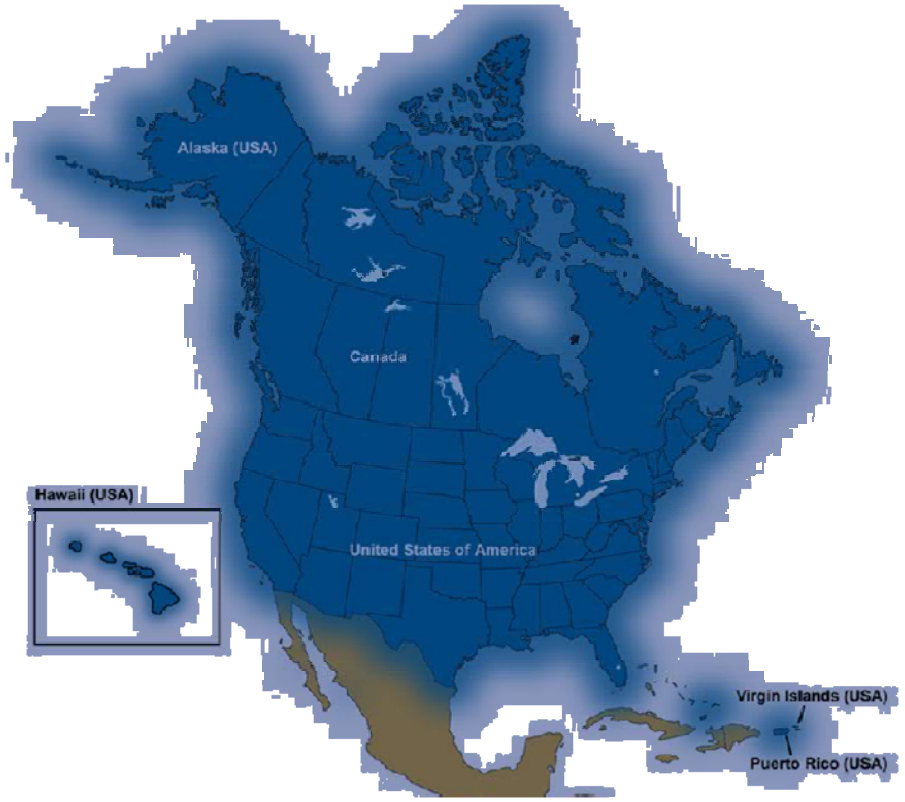
PROTOTYPE

Mobile Solutions: Integrated GSM/Satellite

Network Coverage

On land:

- Continental United States (CONUS)
- Canada
- Puerto Rico, Hawaii, US VI, and Alaska
- Up to 200 miles offshore in each of these areas



Video Share

Only 3G network capable of simultaneous voice and data

First IMS application: VideoShare

- First responder tool
  - Can narrate while streaming
  - GPS will add coordinate data
- Law Enforcement Tool
  - Use as tactical “mirror”
  - Surveillance

Wireless Priority Service (WPS)

- A powerful but under-utilized feature for public safety!
- Provides agencies like fire, police, Dept. of Justice, Homeland Security, the Department of Defense, and others priority access in heavy network traffic.
  - Managed by Federal National Communications System (NCS)
  - Available to NCS-authorized users in all AT&T Mobility home GSM coverage areas

- How it works
  - Register your SIM card/phone number with the WPS (http://wps.ncs.gov)
  - Authorized users are assigned a priority rating (1-5 based on organization type and requestor role)
  - Once WPS is activated, just dial *272 plus your destination number
  - Your call will be flagged as an urgent communication and the next available radio resource at the cell level will connect you

Evaluating a wireless vendor

Things to Consider:

- Network Scope and Scale
- Network Reliability
- Speed and connectivity

AT&T – Industry Leader:

47K+
Cell sites covering Top 100 U.S. Markets

70K+
WiFi hot spots in >80 countries

16+
Petabytes of data per day

24x7
Network monitoring & management

320+
U.S. Metro Areas with 3G coverage

4K+
MPLS nodes serving 143 countries

Frost & Sullivan recognized AT&T as being the "Overall Best Wireless Service Provider" in the U.S. in 2007.