The Future of Public Safety Communications

A look at tomorrow's technology and how it can meet the challenges facing America's first responders and public safety communications.

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BOSTON AREA POLICE EMERGENCY RADIO NETWORK (BAPERN)

a backbone consisting of 22 simulcast sites and 22 receive sites.
“I only wanna hear from the 984... Everyone else stay off the air!”

- Boston dispatcher trying to prioritize communications over LMR during Boston Marathon bombing, April 2013
BOSTON-AREA INTEGRATED RESOURCES

- Municipal Fiber
- Backbone Microwave, 1 GB/s
- Other Microwave
- PSNet Backbone Nodes
John Daley, Dep. Supt, BPD:

“.. as the manhunt unfolded, officers used non-traditional means to communicate, including texting.

‘The force on the ground in Watertown went from about 60 sworn officers to over 1800,

”We called Comcast and asked them to open up the Xfinity Wi-Fi in Watertown..... “ for use by sworn personnel.”

Marathon Bomber manhunt – April 19, 2013
Mass. Public Safety Services gave the FirstNet team incident accounts, user survey results, and after action reports about the bombing and other events regarding the use of mobile data and devices in Massachusetts.

Their analysis pinpointed over 70 recommendations for improvements to public safety communications.
Demand on City IT infrastructure

and the City Network

1. Network Bandwidth
2. Radio Backhaul
3. Secure traffic & security
4. Data storage
5. Disaster Recovery
6. Colocation facilities
City of Boston Fiber Backbone Design

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Mike Lynch, Broadband & Cable
Boston Dept. of Innovation and Technology

Tuesday
September 20, 2016
Austin, TX
FirstNet:

“What will it be used for?”
At the moment, it’s close to 2:30 p.m., the board is filling up with calls and almost every city ambulance is busy.

As the dispatcher, EMT Gallagher sits at her terminal watching 3 different computer screens, headset on, and manages what every city ambulance is doing.

1. EMS: Deployment, records, ED and triage data
Boston Fire

October 1923, the first use of fire service two-way radio in the United States was introduced in Boston.

Initially used for communications with the fireboats, the simultaneous transmission of alarms by radio was commenced on June 26, 1928.

Fire Needs:

Situational Awareness, push-to-talk communications, streaming video, real-time vehicle tracking, web-based emergency-operations-center functions for command and control, GIS and mapping.
Police needs: Situational Awareness, push-to-talk communications, streaming video and imagery, real-time vehicle tracking, web-based emergency-operations-center functions for command and control, GIS and mapping, Public safety surveillance camera control, access and archiving; Shot Spotter; records, data, Body camera deployment. Gov Data & GIS Mapping, Social Media for public safety
Surveillance camera deployment:
About 100 in 2013 and up to ~ 300 now.
Boston Police Chief Gross participates in body camera program

BOSTON POLICE DEPARTMENT
Boston Police Chief William Gross discusses the body camera pilot program with a community member.

Providing cameras to the entire Police Department would cost more than $5M in the first year (Taser and VIEVU)
Congress approved $7 billion in February 2012 to build the network and reallocated 20 megahertz of spectrum airwave capacity for it. $7 billion is less than half of the $15 billion the FCC estimates the network will cost. To succeed, the network ultimately has to be affordable for state and local users, who will pay for operations and maintenance
FirstNet Awards 700 MHz Band 14 Relocation Grants

August 18, 2016: The First Responder Network Authority (FirstNet) funded eight awards for its 700 MHz band 14 incumbent spectrum relocation grant program. The awards range from $14 million to $13,500. The program provides financial assistance to eligible public-safety entities for relocating existing radios and systems from band 14 in advance of the deployment and operation of the nationwide public-safety broadband network (NPSBN). The eight awardees and their rounded award amounts are:

- Illinois Emergency Management Agency – $14 million
- Virginia State Police – $7.3 million
- Arkansas State Police – $3.8 million
- Massachusetts State Police – $1.6 million
- Department of Defense (DoD), Honolulu County, Hawaii – $44,500
- Marshall (Michigan) Fire Department – $23,500
- Stamford (Connecticut) Fire Department – $15,900
- Post Falls (Idaho) Police Department – $13,500