Broadband Summit

Public Safety LTE – Lessons Learned from the Las Vegas Metro Police Department Band 14 Trial

David Fein
Systems Engineer

May 5, 2014
A Little History

- Nevada has a close knit communications community that had been trying to work with disparate LMR systems
- During the PSIC program and subsequent funding from DHS, the LMR systems were tied together by IP
- This fostered better relationships between system operators- they were forced to work together!
- FirstNet on the horizon- a lot of unknowns- what’s a good way to figure out how it would work?
- Do a Demonstration!
Purpose of the Trial

- Understand how LTE mobile broadband with FirstNet can enhance operations and service to the community
- Improve data connection to mobile units to move the desk in the office to the vehicle
- Demonstrate interoperability of Voice and Data between Las Vegas Metropolitan Police Department, Nevada DOT, and NV Energy
- Test video delivery and transmission to and from the mobile units, simulating an incident or event, and the usefulness of the video information
- Determine if there are applications available now to enhance decision making and situational awareness throughout the chain of command
- Summarize the trial with a live demonstration for the Las Vegas Public Safety community
Participants in the Trial

- **Las Vegas Metropolitan Police Department, Nevada DOT, and NV Energy** provided vehicles, personnel, and applications.
- The **FAST Center** provided support for the demonstrations and video from their traffic cameras.
- **ng Connect** coordinated member applications and hardware to outfit the vehicles.
- **Alcatel-Lucent** provided an End to End LTE Network Including: Band 14 eNodeB and S&P Gateway Located in Las Vegas, Technical Support and Implementation Services, connectivity and management services to the remote ePC at Alcatel-Lucent’s Murray Hill, NJ Public Safety Lab.
Las Vegas Trial Network

Las Vegas FAST Center

Hosted LTE Core

Murray Hill, NJ
Applications

- Video Collaboration
- Connecting LMR, WiFi, and fixed sites
- Provisioning LMR distribution to smart phones
- Vehicle Location Tracking
- Remote Desktop Access

Vital sign monitoring – Zephyr
Video sharing - Vidyo
Audio and Video Sharing - MutuaLink
and RadiolP
Telestratlon
GPS tracking/mapping - LiveView
Video Surveillance/sharing – Genetec
Facial recognition – Eclipse IR and NEC
Devices and Connections

Cassidian and Cal-Amp in-vehicle modem/WiFi router
Axis in-vehicle cameras
LiveView GPS receiver/modem
MutualLink server, mobile router, and smartphone app
Totus street light and surveillance platform
LTE 4G Band 14 Coverage Area
October 8, 2013 Demonstration

- Six scenarios demonstrating the use of video from several sources, delivered to multiple end users, sharing information by telestration
  - Remote troubleshooting
  - Improved situational awareness for command staff and units enroute
  - Using the data and video on site to collaborate with a wider group of experts and decision makers
- Three scenarios demonstrating the use of GPS and Vehicle Location to plot vehicle position and share data across multiple end users
  - Vehicle accident location information
  - Tracking service vehicles
  - Locating lost or unresponsive units
- Devices
  - Tablets, smart phones, LMR, cameras
  - Mobile Modem/Router/WiFi hotspot band 14 routers
Challenges

• Education and training of end users
  o First Responders don’t like change...but they do like gadgets
  o Balancing the gee whiz factor with appropriate use
• Disparate network configurations
  o Connecting three entities that hadn’t thought about sharing data
• Available end user devices
  o Mostly prototypes and first production samples
• Site Location
  o Finding a suitable site to cover the proposed operating area
• Mobile vs. Handheld devices
  o Transmit power and receive sensitivity differential
Benefits

• Gain Field experience with new first responder tools and enhanced interoperability/collaboration

• A critical mass of applications are available today for an LTE Network to enhance decision making, effectiveness, and safety

• Identified capabilities to deploy and further refine to address first responder needs
Lessons Learned/Plan for the Future

• Connections to legacy networks
  o Plan ahead! Mapping data bases, controlling access
• Maintaining duality during lengthy transition
  o FirstNet will roll in over years, plan for two systems simultaneously operating
• Many solutions available now from various suppliers to bridge the legacy to LTE gap
  o Most of the experience demonstrated in Las Vegas can be had now, using a commercial provider 4G LTE network, working within the limitations of those networks; congestion, data limits, etc.
  o The RF equipment utilized all had multiband capability.
• ng Connect Program
  o Partner’s willingness to provide devices, applications, and installation support was critical to success
• Exposure to what FirstNet can be was extremely valuable
Q & A

Follow APCO at...

facebook.com/apcointernational  @apcointl