Emerging Technologies – Regulatory and Legislative Developments

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Texting 9-1-1

- December 2012: Carrier-NENA-APCO Agreement
  - 4 largest carriers agreed to make text-to-911 available by May 15, 2014
- May 2013: Report & Order
  - Required bounce-back by September 30, 2013
- August 2014: FCC Order & FNPRM
  - Required text-to-911 for "covered text providers," sought further input, established a Task Force on optimal PSAP architecture

What's Required

- "Covered text providers" must, starting December 31, 2014, deliver texts to PSAPs within 6 months of a valid request

- PSAP Text-to-911 Readiness and Certification Registry

  - http://www.fcc.gov/encyclopedia/psap-text-911-readiness-and-certification

- Remaining issues:

  - Roaming, location info, OTT, text via non-CMRS networks (WiFi), rich media, real-time text, vehicle telematics, etc.

The IP Transition and 9-1-1

- Copper telephone lines are still very much in use throughout the United States
  - However, new technology has emerged which leverages internet protocol (IP) based networks and modern hardware to deliver landline phone service
  - This "IP Transition" will impact current and future 9-1-1 services:
    - Enabling NG9-1-1
    - Introducing vulnerabilities

Public Safety Issues

- Consumers must know they are able to reach 9-1-1 whether they use PSTN, a VoIP service or a wireless phone
- The facilitation to an all IP network must be done without compromising any of the fundamental principles that made our phone system a model for the world
  - Reliable
  - Redundant
  - Secure
  - Power

- November 2014 NPRM on issues arising from the IP transition and implications for public safety
- APCO's Position
  - Backup power for 9-1-1 is essential (voice, and eventually NG9-1-1 capabilities)
    - Public education and standardization needed
  - Must ensure PSAPs and the public receive timely, accurate, and informative notices of transition from copper
    - Alarm systems, medical alert inputs to PSAPs must be preserved
  - Cybersecurity increasingly important
    - IP-based technology and increased interconnection introduces vulnerabilities
  - Automatic location information (ALI)
    - Need consistency with ALI provided over copper
    - Ensure no additional costs for PSAPs to receive ALI

- ## August 2015 Order
  - Recognizes that unlike copper lines, fiber- and IP-based networks do not carry their own power
    - In event of power outage, may not be able to reach 9-1-1
  - Requires providers of residential, non-line-powered voice services to make available 8-hours of standby backup power to consumers
    - Within 3 years, providers must make available 24-hours of standby backup power

9-1-1 Reliability & Resiliency

FCC 9-1-1 Resiliency Timeline

| Sept. 2013:
Wireless Network Resiliency NPRM | Dec. 2013:
9-1-1 Reliability Certifications & Outage Notification Order | Nov. 2014:
9-1-1 Governance NPRM | Mar. 2015:
Part 4 Outage Reporting Rules NPRM | Aug. 2015:
Backup Power Order |

September 2013 NPRM:

- Proposed requiring wireless service providers to share information regarding the operational status of their networks during emergencies with consumers

  - CMRS providers would have to report the percentage of cell sites operational during and immediately after disasters; or

  - CMRS providers must disclose information about practices they have implemented to promote the reliability of their networks

    - E.g., Information about provisioning of backup power (% of sites equipped, duration of supply, etc.) and available supplementary deployments (COWs/COLTs, etc.)

APCO's Comments:

- Specific, timely situational awareness information would be of much greater value than reports on what steps providers have taken to improve reliability and resiliency

- PSAPs should have this info in a format that can be used to easily assess the outage area on the PSAP's map system

  - E.g. coordinate boundaries for the outage area, GIS files, or text information from internal carrier reporting systems that can be input into the PSAP's map and/or CAD system to provide visual representation of the affected area

APCO's Comments:

- – While wireless network outages threaten the public's ability to contact 9-1-1, they also impede emergency alerts and information transmitted via mobile apps, including social media

- – Thus, it would be valuable to PSAPs to know what kind of outage has occurred (power outage, physical damage, transport network out of service, etc.), the scope of the outage, and estimated repair time

- December 2013 Order
  - As of November 2014, covered 9-1-1 service providers must:
    - Notify PSAP "as soon as possible but no later than thirty minutes after discovering the outage" with "all available information" and contact information for follow-up
    - No later than two hours after the initial contact, provide "additional material information" including nature of the outage, best-known cause, geographic scope, & estimated time for repairs
  - Covered providers must annually certify they comply with best practices or reasonable alternatives with respect to:
    - Critical 9-1-1 circuit diversity
    - Central office backup power
    - Diverse network monitoring
  - Initial certifications were due October 15, 2015

9-1-1 Governance

- November 2014 Policy Statement & NPRM proposed:
  - Expanding the definition of "covered service providers"
  - Increase info sharing during 9-1-1 disruptions
  - Ensuring transparency/accountability for major changes to 9-1-1 service through public notification
- APCO's Comments
  - New 9-1-1 elements should have necessary redundancy, reliability & governance mechanisms to extent of FCC authority
  - Support appropriate, reasonable regulations, so long as FCC does not exceed jurisdiction over state/local PSAPs
  - Covered service providers should be responsible for acts of agents and subcontractors
  - Prefer consensus-based standards and best practices
  - Support providers providing notice of "major changes"

- March 2015 NPRM:
  - Proposed updates to the FCC's Part 4 Outage Reporting rules
    - Sought comment on reporting requirements based on partial loss of communications and/or geographic impact
- APCO's Comments:
  - Supported reporting requirements where an outage "significantly degrades or prevents 9-1-1 calls from being completed"
  - Supported reporting requirement for any outage affecting one-third of a county or PSAP service area
  - Require outage report whenever at least half of trunks serving a PSAP are out of service

Non-Service Initialized (NSI) Devices

NSI Call Rule

- ## April 2015 NPRM
  - FCC asks whether to sunset the rule requiring providers to transmit 9-1-1 calls from NSI devices

- ## APCO's Comments
  - Rule no longer necessary and should be removed after a 1-year transition period to allow public outreach & education and make substitute handsets available.
  - Has led to significant abuses of 9-1-1 while wireless industry has evolved to offer low-cost alternatives
    - A significant # of 9-1-1 calls from NSI devices are hang ups, false reports of emergencies, harassing calls, or other intentional non-emergency calls
    - At the same time, anyone in need of emergency assistance should have full access to 9-1-1 capabilities, including call-back and location info

- APCO's Comments
  - FCC should *prohibit* providers from forwarding 9-1-1 calls from NSI devices
  - PSAPs generally cannot identify those who make 9-1-1 calls from NSI devices, and waste a substantial amount of time answering and performing follow-up with abusive calls from NSI devices
  - No exceptions, whether in limited cases where a device may appear as NSI to a carrier, or in the event that service terminates because pre-paid minutes lapse or post-paid subscriber fails to pay bill

Spectrum

- FCC inquiry regarding public safety use of the 4.9 GHz channels. Seeking to promote more efficient and effective use of the band.

- APCO convened a Task Force to address:
  1. How 4.9 is being used by public safety
  2. How we can increase use of 4.9 GHz by public safety
  3. How we can reduce barriers to use of 4.9 GHz
  4. How we can drive investment in the 4.9 GHz band

- APCO Task Force filed its report September 28

- ## FCC September 1 NPRM
  - Proposed to allow railroad police to access public safety interoperability and mutual aid channels

- ## APCO's Comments
  - Not opposed to allowing railroad police access
  - Favor sharing agreements over direct licensing or a "blanket approach"
  - No need for railroad police to operate base and control station operation

- Sprint ESMR and Cellular A Block deployments have been causing interference to public safety NPSPAC channels
  - Result of commercial cellular operations overloading front end (862-869 MHz) left in place following 800 MHz rebanding
  - Transmissions are overloading LMR radios
- Carriers are operating within licenses, but still have a general FCC requirement to avoid harmful interference
  - Problem will only grow worse as carriers continue to deploy
  - Few LMR radio options available
- Nov. 2 meeting with FCC
  - We are encouraging licensees to submit information on the interference source, whether they're reporting it, the areas impacted, and the nature of public safety deployments impacted

Cybersecurity

Sample Bills

- Cybersecurity Information Sharing Act of 2015 (passed Senate 10/27); Cyber Intelligence Sharing and Protection Act (House); Cyber Threat Sharing Act of 2015 (Senate)
  - Would permit sharing of Internet traffic information between the U.S. government and private entities in order to protect against cyber threats
- Promoting Good Cyber Hygiene Act of 2015 (Senate)
  - Would direct NIST to establish list of cyber hygiene best practices
- PREPARE Act (House)
  - Among other things, would require DHS to report on potential cybersecurity risks to FirstNet NPSBN

- White House
  - February 2015 Summit on Cybersecurity and Consumer Protection
    - Government-industry collaboration
  - Calls to improve cyber for critical infrastructure, information sharing, improving cyber workforce, etc.
- NIST
  - Cybersecurity Framework created in February 2014
    - Sets standards, guidelines, and practices to help organizations protect their information and physical assets from cyber-attack
    - Used by organizations to evaluate and plan cyber programs
  - 2015 RFI
    - Seeking input on whether and how the Framework should be updated

FirstNet

- Released April 27, 2015
- Included details and solicited feedback on various aspects of acquisition, including:
  - Device ecosystem
  - Application ecosystem
  - Service availability
  - Cybersecurity
  - Integration
  - Innovation
- A "national acquisition approach"

- APCO's Comments:
  - Must maximize response on part of wireless communications industry to leverage industry expertise
  - Integrate NG9-1-1 and FirstNet using standards-based, open architecture
  - Leverage location accuracy synergies provided by roadmap created by APCO and others

- NG9-1-1 and FirstNet = two sides of an emergency response, with the PSAP as "nerve center" connecting them

- Integration of FirstNet and 9-1-1 requires a standards-based open architecture – APCO is actively working to develop such standards and best practices.

- FN must accommodate both legacy and NG PSAPs, leverage work with ESInets, etc.

- "Appropriate NG9-1-1 content can be delivered to dispatchers from the PSAP call-taker"
  - Dispatchers and call-takers are often the same person or work in the same center
  - Scenarios where NG9-1-1 content is shared between PSAPs
- "Text to 9-1-1 is part of the NG 9-1-1 capability"
  - Text-to-911 exists today as an interim step (SMS-based) toward NG9-1-1
- How FirstNet's services and core will interface with public safety entities:
  - Must account for legacy PSAPs that will exist for some time throughout the transition to NG9-1-1
  - "PSE Applications" referenced in this diagram (CAD, RMS, Video) will be hosted and integrated at the PSAP – not physically separate

- Agree that users should be able to continue using the apps they use today

- Application and data interoperability will be key elements of public safety user satisfaction going forward

- Commercial ecosystem for mobile apps has changed dramatically – FirstNet needs flexibility to adapt.

- Focus on filling gaps and coordinating solutions for PS that would not otherwise be achieved

Cybersecurity Special Notice

- Outlines issues and considerations with respect to how cybersecurity will be implemented in NPSBN.
    - Confidentiality
    - Integrity
    - Availability
- APCO's Comments
    - Need more detail on how the cyber strategy will involve and account for PSAPs (both legacy and Next Gen)
    - Security should not come at expense of public safety users' ability to use the network
    - Apps present a potential vulnerability; app security should be of utmost concern
    - APCO will continue to serve as a resource to FirstNet via cybersecurity outreach efforts like TFOPA and CSRIC

- Restructuring at the Top
  - New CEO Mike Poth
  - TJ Kennedy named President
- Changes to Board
  - Terms expired for Tim Bryan and Frank Plastina
  - Neil Cox and Ed Horowitz join FirstNet Board
- New SMEs
  - Bill Hinkle, Sr. 9-1-1 Advisor,
  - Brent Williams, Sr. EMS Advisor
  - Mike Worrell, Sr. Fire Services Advisor
  - Joshua Ederheimer, Sr. Law Enforcement Advisor

- 60+ legal interpretations announced at the October Board meeting:
  - Defines terms such as Core Network, Rural, Consumers, etc.
  - Clarifies that state opt-in is the default
- Key Remaining Issue
  - Definition of "public safety entity"

Incumbent Users

- FirstNet requests that:
  - the continuation of FCC licenses or other authorizations under Band 14 by any incumbent be conditioned upon the requirement that no operation on Band 14 be permitted without the express consent of FirstNet after July 31, 2017.
  - Alternatively, or in addition, continued operation on Band 14 should be conditioned on the cessation of all operations on Band 14 within 90 days written notice from FirstNet that deployment of the NPSBN is to begin in its state.
  - and that the FCC take any other necessary action to ensure that operations on Band 14 cease in accordance with these conditions.
- Anticipates a grant program to relocate incumbents
- FCC seeking comment on FirstNet request

Thank you!

- APCO website: www.apcointl.org
- AppComm: www.appcomm.org
- Twitter: @GRO_APCO

- APCO events: www.apcointl.org/events.html
  - March 15-16: Kansas City Emerging Tech Forum
  - May 16-17: Broadband Summit in DC
  - August 14-17: APCO's Annual Conference in Orlando