Emerging Technologies – Regulatory and Legislative Developments

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Regulatory & Legislative Developments

- **9-1-1**
- **Emergency Alerting**
- **Spectrum**
- **Cybersecurity**
- **FirstNet**

9-1-1

FCC 9-1-1 Resiliency Timeline

Wireless Network Resiliency

- **FCC *NPRM*** (Sept. 2013):
  - 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.)

Wireless Network Resiliency

- **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
  - 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.
    - 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.

9-1-1 Reliability Certifications

- **FCC *Order*** (Dec. 2013):
  - 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

- **FCC *Policy Statement & NPRM*** (Nov. 2014) proposed:
  - Expanding the definition of "covered service providers"
  - Increasing info sharing during 9-1-1 disruptions
  - Ensuring transparency/accountability for major changes to 9-1-1 service through public notification
- **APCO 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"

Outage Reporting

- **FCC *NPRM*** (Mar. 2015):
  - 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 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

IP Transition

- The transition from legacy copper networks to IP-based technologies will impact current and future 9-1-1 services:
  - Consumers must know they are able to reach 9-1-1 whether they use PSTN, a VoIP service or a wireless phone.
  - The transition 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.
    - Important considerations, such as reliability, redundancy, security, and maintaining power.
- **FCC *Order*** (Aug. 2015):
  - 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

IP Transition

- **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

SANDy Act

- **Securing Access to Networks in Disasters (SANDy) Act (H.R. 3998)**
  - Would require FCC to:
    - launch a proceeding to address roaming during emergencies
    - create POC list for PSAPs
    - report on mobile outage data and making WiFi network available during emergencies
  - GAO to report on resiliency of electrical power for telecomm networks and backup at building sites
  - Require FEMA to ensure escorts, access, and credentialing for essential service providers

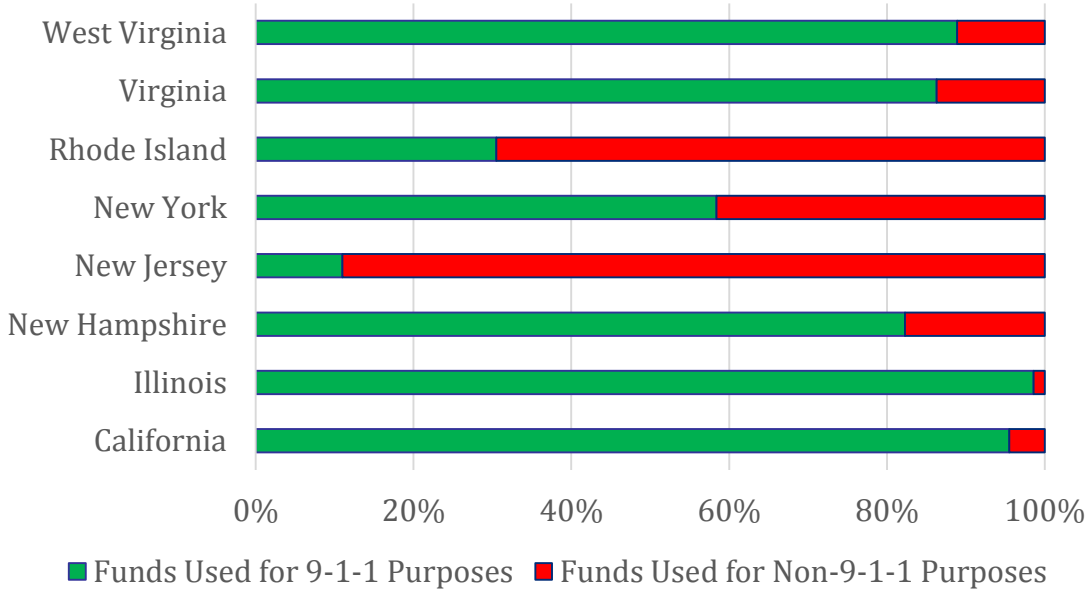
Text-to-911

- **Carrier-NENA-APCO Agreement** (Dec. 2012)
  - 4 largest carriers agreed to make text-to-911 available by May 15, 2014.
- **FCC *Report & Order*** (May 2013):
  - Required bounce-back by September 30, 2013.
- **FCC *Order & Further Notice of Proposed Rulemaking*** (Aug. 2014):
  - Starting December 31, 2014, "covered text providers" must deliver texts to PSAPs within 6 months of a valid request.
  - Established PSAP Text-to-911 Readiness and Certification Registry
  - Remaining issues:
    - Roaming, location info, OTT, text via non-CMRS networks (WiFi), rich media, real-time text, vehicle telematics, etc.
  - Established a Task Force on Optimal PSAP Architecture (TFOPA).

FCC 9-1-1 Fee Report

- Annual report to Congress on states' use of 9-1-1 fees and charges, as required by the NET911 Act.
  - **8** states reported diverting 9-1-1 fees and charges to non-9-1-1-related purposes.

Amount of 9-1-1/E9-1-1 fees spent on non-9-1-1-related purposes:	**$223,420,909**
Amount of 9-1-1/E9-1-1 fees spent on cybersecurity-related expenditures:	**$25,306,952**



FCC 9-1-1 Fee Report

- **APCO's Comments**:
  - Fee diversion hurts the case for 9-1-1/NG9-1-1 funding nationwide.
  - There is no consensus-based, standardized definition of NG9-1-1.
    - The Commission should take a proactive role in comprehensively defining NG9-1-1 as "***end-to-end (from the caller to the telecommunicator) IP connectivity enabling current voice communications, future multimedia, and other data capabilities to flow from the 9-1-1 caller to the PSAP and be properly reported, archived, and further transmitted between the PSAP and first responders***."
  - The FCC should request further detail about how states are spending money on NG9-1-1 and cybersecurity, as well as the number of texts received and methods used to receive them.
  - The FCC should request information on governance-related issues inhibiting the deployment of NG9-1-1.

Non-Service Initialized (NSI) Devices

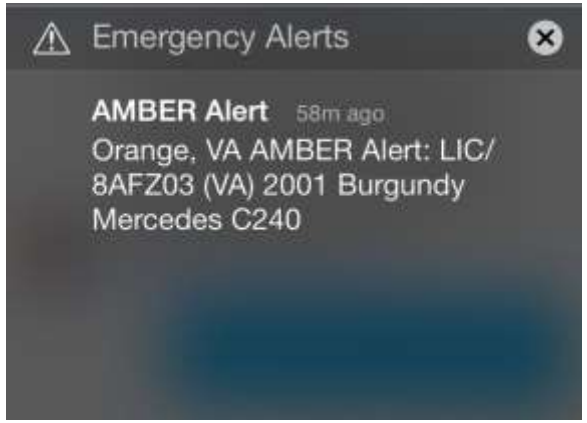
NSI Call Rule

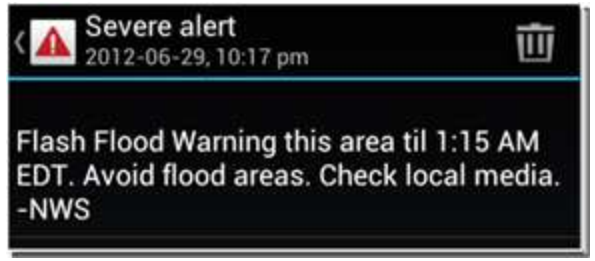
- **FCC *NPRM*** (Apr. 2015):
  - FCC asks whether to sunset the rule requiring providers to transmit 9-1-1 calls from NSI devices.
- **APCO Comments**:
  - Has led to significant abuses of 9-1-1 while wireless industry has evolved to offer low-cost alternatives.
    - A significant # of 9-1-1 calls 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
  - FCC should *prohibit* providers from forwarding 9-1-1 calls from NSI devices.

Emergency Alerting

Wireless Emergency Alerts (WEA)

- What are WEA alerts?
  - Launched in April 2012, special type of message sent by authorized governmental agencies to consumers' mobile devices.
  - Each alert is accompanied by a unique signal and vibration.
  - Reserved only for specific emergency situations:
    - Presidential Alert
    - Imminent Threat to Safety or Life
    - AMBER Alert (abducted child)
  - Consumers receive WEA alerts by default, but may opt out of all but Presidential Alerts.
  - Carrier participation in voluntary, but most do.





Wireless Emergency Alerts (WEA)

- **FCC *NPRM*** (Nov. 2015):
  - FCC proposing to enhance the content and geo-targeting of WEA alerts:
    - Expand max. character limit from 90 to 360.
    - New class of alerts: Emergency Government Information.
    - Allow embedded URLs, phone numbers, and other multimedia.
    - Allow alerts in languages other than English.
    - Target alerts to a geocode, circle, or polygon no larger than the target area.
    - Establish state and local testing and logging/reporting requirements.
- **APCO Comments**:
  - Largely supported FCC's proposals:
    - Larger max. character limit and embedded information could help reduce unnecessary 9-1-1 calls and enable more informed and focused 9-1-1 calls to PSAPs.
    - Narrower geo-targeting could reduce public confusion and help emergency managers and responders better control and manage the situation.
    - Testing should be designed to confirm functionality but avoid "alert fatigue."

Spectrum

Spectrum

- **4.9 GHz**
  - 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 how to increase use of 4.9 GHz by public safety and filed Report September 28, 2015.
- **Railroad Police Interoperability**
  - **FCC *NPRM*** (Sept. 2015):
    - Proposed to allow railroad police to access public safety interoperability and mutual aid channels
  - **APCO Comments**:
    - Not opposed to access by RR police, but favor sharing agreements over direct licensing or a "blanket approach."
- **800 MHz NPSPAC Interference**
  - Sprint ESMR and Cellular A Block deployments have been overloading front end of public safety radios, causing interference to public safety NPSPAC channels.
  - APCO encouraging licensees to submit any additional information to FCC.

Cybersecurity

Relevant Cyber Action

- **Cybersecurity Information Sharing Act of 2015** (Pub. L. No. 114-113)
  - Permits 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 (H.R. 3664)**
  - Would direct NIST to establish list of cyber hygiene best practices.
- **PREPARE Act (H.R. 3583)**
  - Among other things, would require DHS to report on potential cybersecurity risks to FirstNet NPSBN.
- **Summit on Cybersecurity and Consumer Protection** (Feb. 2015)
  - Government-industry collaboration to bolster cybersecurity.
- **Executive Order 13636 – Improving Critical Infrastructure Cybersecurity**
  - Promotes partnerships between the U.S. Government and private industry to improve cybersecurity information sharing and develop and implement risk-based standards.

NIST Cybersecurity Framework

- 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.
- **NIST Request for Information (RFI)** (Dec. 2015)
  - Seeking input on whether and how the Framework should be updated.
- **APCO Comments**:
  - With the advent of NG9-1-1, FirstNet, and other IP-based communications, it is critical that PSAPs and the entire 9-1-1 ecosystem be considered as part of the overall critical infrastructure approach.
  - The Framework is highly applicable to PSAPs, but so far its use has been limited by a lack of awareness, support, and resources.
  - The Framework would benefit from specific input from the public safety community.
  - APCO is currently developing educational materials and has engaged in several efforts to assist PSAPs on cybersecurity issues. (e.g., TFOPA WG1 mapped out the "functions" identified in the Framework to specific "levels" within the public safety environment).

FirstNet

Timeline

Action	Date
Draft RFP Released	April 27, 2015
Cybersecurity Special Notice Released	October 5, 2015
Final Legal Interpretations Released	October 20, 2015
NTIA *Notice* on FirstNet Fees Released	December 15, 2015
Final RFP Released	January 13, 2016
Vendor Capability Statements Due	March 31, 2016
Vendor Proposals Due	May 13, 2016
Estimated Award Date	November 1, 2016

Request for Proposals (RFP)

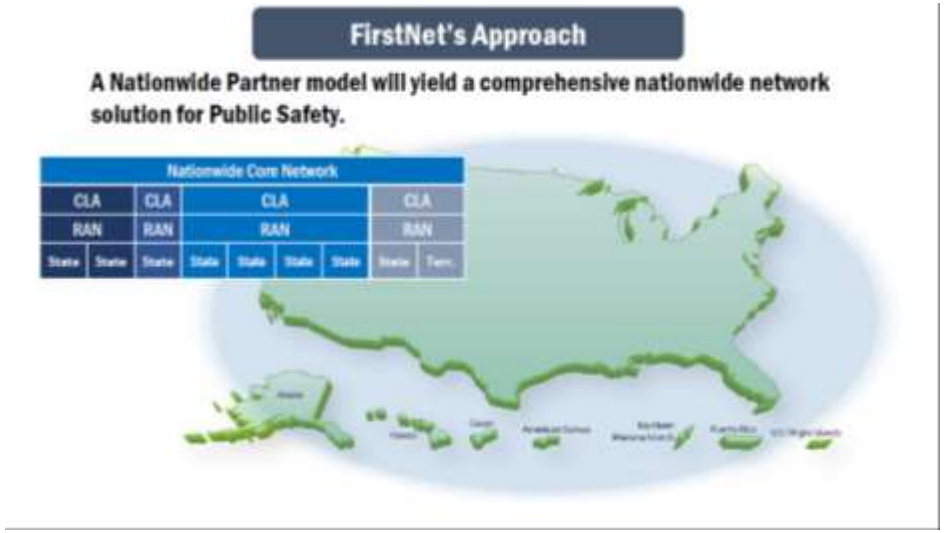
- Included details on various aspects of acquisition, including:
  - Statement of Objectives
  - Timing
  - Minimum Technical Requirements
  - Eligible Users
  - Contract Requirements
  - Interaction with 9-1-1
  - Vision for an App Ecosystem
  - Evaluation Criteria

Request for Proposals (RFP)

- **Objectives**
  1. Building, Deployment, Operation and Maintenance of the NPSBN
  2. Financial Sustainability
  3. First Responder User Adoption
  4. Device Ecosystem
  5. Applications Ecosystem
  6. User Service Availability
  7. Service Capacity
  8. Cybersecurity
  9. Priority Services
  10. Integration of State-Deployed RANs and Existing Infrastructure
  11. Life-Cycle Innovation

Request for Proposals (RFP)

- **Nationwide Approach**
  - "FirstNet is seeking a comprehensive network solution covering each of the 56 states and territories."
    - FirstNet only accepting nationwide bids.
    - Contractor must deliver a detailed deployment plan for every state and territory.
- **Minimum Technical Requirements**
  - FirstNet required to comply with 3GPP LTE standards and open, non-proprietary, commercially available standards.



Request for Proposals (RFP)

- **Eligible Users**
  - **Two Categories**:
    1. Primary Users:
       - "Traditional" public safety (law enforcement, fire, and emergency medical services users).
       - Preferred device connections.
    2. Extended Primary Users:
       - All other public safety users, as defined by the Spectrum Act.
       - May be used to supplement customer adoption and use of NPSBN.
  - **Connection Targets:**
    - "The Contractor will be subject to disincentive payments upon failure to achieve 100 percent of the proposed connection targets for either user group."
      - For Primary User Group: 65% of annual maximum disincentive payment.
      - For Extended Primary User Group: 35% of annual maximum disincentive payment.
    - In addition to disincentive payments, FirstNet may take other actions at its discretion.

Request for Proposals (RFP)

- **Contract Requirements**
  - **Most Favored Customer Pricing Consideration**:
    - The Contractor must provide a "most favored customer pricing arrangement to public safety subscribers."
      - Ensures that public safety subscribers receive the lowest price available for any customer receiving equivalent service.
  - **Minimum Payments to FirstNet:**
    - $5.625 billion over 25 years.
      - $80 million/year in Years 1-5, gradually increasing to $430 million/year in Years 22-25.

Request for Proposals (RFP)

- **9-1-1**
  - **Spectrum Act** requires that FirstNet promote integration of the network with PSAPs.
  - **TAB Report**: "FirstNet must ensure that its network interoperates and interconnects with Next Generation 9-1-1 systems to meet the expectations of consumers who request service through 9-1-1."
  - RFP requires implementation plan for integrating each public safety enterprise network (PSEN) into NPSBN.
    - Establish PSEN point-of-presence locations;
    - Implement PSEN connectivity and interfaces with ESInet; and
    - Interconnect with CAD, dispatch, PSAPs, and NG9-1-1 systems.

Request for Proposals (RFP)

- **Apps**
  - FirstNet requires an **applications ecosystem** that supports the NPSBN with capabilities and services relevant to public safety.
  - Includes the following components:
    - Service delivery platform
    - Application development platform
    - Hosting and cloud services
    - FirstNet applications store
    - Applications life-cycle management
    - Developer and application certification
    - Application security
    - Offeror-provided applications

Request for Proposals (RFP)

- **Evaluation Criteria**
  - Capability Statements
    - Demonstrate that a potential Contractor is capable of performing the work.
    - **NOT required.**
  - Proposals will be evaluated based on the following criteria:
    1. Business Management
       - How will the proposal provide effective management of delivery, operation, and maintenance of the NPSBN?
    2. Coverage and Capacity
       - How will the proposal be able to provide necessary coverage and capacity?
    3. Products and Architecture
       - How will the proposal provide the required services, apps and device ecosystems, architecture, and more?
    4. Value Proposition
       - Can the proposal meet all the stated objectives?
    5. Past Performance
       - How has the Offeror performed on past projects?

FirstNet Fees

- The Spectrum Act requires that NTIA review and approve the fees that FirstNet assesses its users.
  - **NTIA *Notice*** (Dec. 15, 2015):
    - NTIA proposes to conduct its review to afford FirstNet as much flexibility as possible.
    - The sole purpose of the fee review is to ensure that FirstNet is self-sustaining.
    - NTIA will NOT evaluate the reasonableness of specific fees assessed by FirstNet or its partners, nor will it analyze the terms and conditions of any CLA or other agreement between FirstNet and another entity.
    - NTIA will defer to FirstNet on its use and retention of reserve or working capital funds.
  - **APCO Comments**:
    - APCO supports the deferential approach adopted by NTIA:
      - NTIA must allow FirstNet the flexibility to respond to changing market conditions and the dynamic needs of first responders.
      - FirstNet must be free to exercise its discretion to take such financial measures as it needs to fulfill its important responsibility to deliver an advanced, interoperable, NPSBN.

Band 14 Incumbent Users

- The Spectrum Act directs the FCC to grant FirstNet an exclusive license to use Band 14.
  - Includes requirement that the FCC "take all actions necessary to facilitate the transition of existing public safety broadband spectrum to [FirstNet]."
- **FirstNet Letter** (Oct. 2015) and **FCC *Public Notice*** (Nov. 2015):
  - FirstNet requesting 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.
- **APCO Comments**:
  - Supports FirstNet's request:
    - "The Commission should provide FirstNet with **appropriate deference and assistance**, consistent with the legislation that created FirstNet."
    - "Consistent with the Spectrum Act, **FirstNet must have full discretion** in addressing incumbent operations in its licensed spectrum."

What's Next

Action	Date
Vendor Capability Statements Due	March 31, 2016
Vendor Proposals Due	May 13, 2016
Estimated Award Date	November 1, 2016
Complete and Issue All State Plans	6 Months After Award
Nationwide Coverage on Band 14 or Non-Band 14. Band 14 Deployables and Devices Available.	6 Months After Award
State Decision to Participate or Opt-Out Due	90 Days After Receipt of State Plan
If Opt-Out, Alternative Proposals Due	180 Days After Notice of Opt-Out
Implementation of Mission Critical Push-to-Talk; Proximity Services; and Support for NG9-1-1 Systems.	2 Years After Award

Thank You!

- APCO GRO website: https://www.apcointl.org/advocacy.html
- AppComm: www.appcomm.org
- Twitter: @GRO_APCO

- APCO events: www.apcointl.org/events.html
  - May 16-17: Broadband Summit in DC
  - August 14-17: APCO's Annual Conference in Orlando
  - November 1-2: Seattle Emerging Tech Forum

APCO GRO