

**National Public Safety Telecommunications Council (NPSTC)**  
**Meeting by Teleconference**  
**September 6, 2018 | 1:00 p.m. – 3:00 p.m. ET**

---

**Welcome and Opening, Ralph Haller, NPSTC Chair.** Mr. Haller called the meeting to order at 1:00 p.m. ET. Participants on the phone were asked to send a record of their attendance to [Attend@npstc.org](mailto:Attend@npstc.org).

**Federal Partners Update**

**Department of Homeland Security (DHS), Office for Interoperability and Compatibility (OIC), Norman Speicher, Program Manager.** Mr. Speicher discussed recent activities at OIC. The Next Generation First Responder (NGFR) program develops, adapts, and integrates cutting-edge technologies to make responders better protected, connected, and fully aware. In the 4th year of a 5-year program, NGFR focuses on integrating, testing, and transitioning NGFR-developed technologies, and is now rolling out an updated version of the NGFR Integration Handbook for industry comment.

The NGFR Integration Handbook outlines a “plug-and-play,” standards-based environment that enables commercially developed technologies to integrate with existing first responder infrastructure. It guides industry system developers and vendors on interoperability requirements that may facilitate integration. It reduces barriers to entry into the first responder marketplace and opens doors to entrepreneurs, while lowering costs and increasing choices for public safety organizations. There are three sections to the handbook: the executive summary, which provides a high-level overview of the NGFR SmartHub system concept and the various system components; engineering design, which provides a system level view of hardware and software components required to implement the NGFR SmartHub architecture; and a technical supplement that provides additional details needed by development and test teams to facilitate integration. The SmartHub architecture consists of individual devices or modules that interact with each other to provide responders with the capabilities they need to execute their operations.

Mr. Speicher said OIC welcomes feedback and suggested those interested should visit: <https://www.dhs.gov/science-and-technology/ngfr/handbook> and download the handbook.

Kevin McGinnis, National Association of State Emergency Medical Services Officials (NASEMSO), asked about the progress of commercialization for the Vital Tag project. Mr. Speicher said he is not sure of the exact timeline, but in the near future, OIC will conduct a test of the integration of the project using the handbook in an operational exercise in Harris County, TX. Barry Luke, Deputy Executive Director, NPSTC, said NPSTC has been relying on this excellent handbook in its Working Groups.

**Department of Homeland Security (DHS), Office of Emergency Communications (OEC), Dusty Rhoads, Branch Chief.** Mr. Rhoads said OEC has been working this year to update the National Emergency Communications Plan (NECP), aided by the input of stakeholders, including NPSTC. OEC is also developing an update to the State, Local, and Territorial 2015 Emergency Governance Guide, with added material focused on tribal entities.

OEC is hosting a communications task force to identify the challenges of integrating incident management response, which will include data management as well as voice. OEC is working with the National Council of Statewide Interoperability Coordinators (NCSWIC), Federal Emergency Management Agency (FEMA), Firescope, and the Association of State Foresters. All task force participants have agreed updating the structure of the guidance is needed. The task force has identified the need for an IT Service Unit (ITSL) Leader, including an associated curriculum and course, to be rolled out in the next year.

On the southwest border, OEC is engaged in a federal, state, local, and tribal effort to address communication efforts. Local meetings of stakeholders provide an opportunity to share challenges on the borders and to brainstorm solutions. On the northern border, plans are being made for a face-to-face meeting with Canada in Spring 2019. There have been webinars on a variety of topics, including the creation of specific training for Communications Unit Leader (COML), targeted to the needs of border responders.

The Interoperable Communications Technical Assistance Program (ICTAP) received 268 requests for technical assistance in FY 2018. OEC Coordinators have supported communications for a national World Equestrian event, the upcoming 2019 Super Bowl, and during the recent hurricane in Hawaii.

With the National Governors' Association (NGA), OEC hosted workshops in Albuquerque, NM; New Orleans, LA; Portland, OR; and Philadelphia, PA. OEC will continue to work with participating states.

Technology efforts include the completion of a public safety communications network resiliency self-assessment cyber guidebook, discussing jamming, identity credential and access management, and warnings.

### **FirstNet NPSBN Development**

**FirstNet, Jeff Bratcher, Chief Technology and Operations Officer.** Mr. Bratcher reported that Mike Poth, CEO, has accepted an offer from the private sector, but he will be continuing with FirstNet throughout September. Long-time FirstNet member, Ed Horowitz, was reappointed to the Board yesterday and named new Chairman of FirstNet. He was previously Chair of the Finance Committee.

This year, FirstNet launched the physically separate, geographically redundant FirstNet Core in March of 2018, and began the buildout of the Radio Access Network in each of the 56 states and territories, including Band 14, per the state plans. FirstNet also launched the FirstNet App Catalog with over 20 applications available today. The lab in Boulder, CO, is available to host public safety testing of devices and network capabilities.

FirstNet provides continued support of public safety across the country through agency engagements, association outreach, and ongoing education. To date, over 2,500 public safety agencies in 52 states/territories adopted FirstNet. These FirstNet User accounts include 150,000+ connections using FirstNet-branded public safety services. These numbers are more than double that of last July, and demonstrate how quickly public safety is adopting, and now using, the FirstNet network on a daily basis.

Mr. Bratcher said public safety advocacy is at the heart of everything FirstNet does. The FirstNet Public Safety Advocacy team has had a positive impact on the adoption and use of FirstNet by engaging users and potential users of the network and by promoting innovation in public safety communications

technology. FirstNet has heard positive feedback about the features that help first responders with enhanced situational awareness and better coverage and connection.

In FY 2019, FirstNet will continue to work with AT&T as FirstNet enters the stage when the first deliverables will be available. Reinvestments from self-sustaining FirstNet income will be driven by recommendations from the public safety communications community.

**FirstNet Public Safety Advisory Committee (PSAC), Paul Patrick, Interim Chair.** Mr. Patrick said the PSAC has been holding monthly webinars, most recently on Quality of Service, Priority and Preemption, or Priority Assignment, and the Uplift Request Tool. He thanked FirstNet staff for supporting these webinars and providing the PSAC an opportunity to weigh in on these critical network topics. The next webinar will be in September on the IoLST, or Internet of Life Saving Things.

Mr. Patrick said he and EC member Todd Early joined the PSAC's Tribal Working Group for an in-person meeting at the Rincon Fire Department in Valley Center, CA. Among the many topics discussed at this meeting, AT&T gave a buildout and branding report and discussed the expansion of additional associations to the TWG. Tribal public safety users provided feedback. Last week, the Executive Committee traveled to Bedminster, NJ, to tour AT&T's Global Network Operations Center. The PSAC also held an in-person meeting to discuss PSAC business and future planning, and recorded a podcast with PSAC director Dave Buchanan.

Mike Corey, Amateur Radio Relay League (ARRL), said he had been contacted by a member asking for clarification of something the member heard, indicating amateur radio operators are being considered to provide access to FirstNet. Mr. Bratcher said he had not heard that but would follow up on the question.

**Technology and Broadband Committee, Kim Coleman Madsen, Chair; Andy Thiessen, Vice Chair; Dr. Michael Britt, Vice Chair**

**Public Safety Communications Research (PSCR), Dereck Orr, PSCR Division Chief.** Mr. Orr reported that the June conference in San Diego was excellent. For those who could not attend, PSCR videotaped the breakout sessions and presentation slides, now available on the PSCR website. The conference next year may not be held in June. PSCR is scouting potential locations now. PSCR is about to announce the winners of the Point Cloud City competition to do 3-D Lidar mapping of a range of different buildings to assist public safety. The data identification prize challenge is being judged currently and will be awarded in the near future.

**LMR LTE Integration and Interoperability Working Group, Chris Kindelspire, Chair.** Mr. Kindelspire reported the group is continuing to examine Mission Critical Push to Talk IDs, including questions as to how public safety agencies should configure the user identity. The group is finalizing its upcoming report on Mission Critical Push to Talk (MCPTT) User ID. MCPTT display IDs are a key component of first responder safety. Key findings include:

- Of the three MCPTT identity data fields available, the User ID should be used to manage first responder identity.
- A standardized approach to User ID should be created to ensure a common display will occur across the NPSBN.

- Standardized User ID structures should account for devices assigned to individual public safety users as well as shared devices and specialty devices (e.g., dispatch consoles, consoles in fire stations, hospital EDs, etc.).

The group expects the report to be finalized in October, when the full Technology and Broadband Committee will review it and provide input. The report should reach the Governing Board for approval in November.

**Public Safety Internet of Things (IoT) Working Group, Barry Fraser, Chair.** Mr. Fraser reported the Working Group has completed development and review of use cases involving public safety IoT solutions used during: a law enforcement traffic stop; fire department response to a house fire; EMS response to a heart attack; and video access during a convenience store robbery. The development and review of new use cases is almost completed. Use Case 7 is focused on law enforcement response to a school shooting scenario with multi-agency and multi-PSAP coordination. Use Case 8 will examine a severe weather event with loss of macro network coverage, use of direct mode, and coordination and data sharing with secondary responders.

The next steps for the Working Group are to consolidate the use cases into a single document and to do a final review of all the use cases to identify benefits, challenges, and risks. The group will begin work on an outreach report that highlights the main issues that public safety agencies need to consider when adopting IoT.

**Unmanned Aircraft Systems (UAS)/Robotics Working Group, Dr. Michael Britt, Chair.** Dr. Britt reported the Working Group has moved to quarterly meetings from monthly meetings. Quarterly meetings will be held in November, February, May, and August. In July, Robin Murphy, PhD, Professor of Computer Science & Engineering, Texas A&M University, presented on work being done by the Center for Robot-Assisted Search and Rescue (CRASAR), discussing lessons learned from Hurricanes Harvey and Irma and the Kilauea volcano eruption. In November, the focus will be on robotics, and the group is working on details for a presentation on the use of robotics by public safety.

**Broadband Emerging Technologies Working Group, Kim Coleman Madsen, Chair.** Ms. Coleman Madsen reported the Working Group has continued to learn from presentations that highlight technology advances that will impact public safety. In June, Dr. Eric Jing Du, Assistant Professor at Texas A&M University, provided an update on the PSCR-funded research to study cognitive overload in first responders.

There was a presentation by Niki Papazoglakis, Harris County, Texas, on situational awareness applications in July, and in August, the group held a policy roundtable on NG911 data sharing and MCPTT for secondary responders. The Working Group is hoping to host a DHS S&T presentation on the NGFR Technology Implementation Handbook in September.

**Video Technology Advisory Working Group, John Contestabile, Chair.** Mr. Contestabile said the VTAG hosted an interesting presentation in July from David A. Makin, PhD, Lab Director, Complex Social Interactions Lab, Department of Criminal Justice and Criminology at Johns Hopkins Applied Physics Lab. Dr. Makin presented on the "Body Worn Camera (BWC) Perception Study – Research Gap Analysis," which included a discussion on the benefits of body worn cameras and the causes for discrepancies

between body worn camera video, human perception, and other video sources. Dr. Makin asked for feedback from public safety to help identify gaps in and prioritize its research.

The VTAG is working with DHS S&T on a NPSTC Town Hall presentation of the VQiPS Policy Considerations for Video System Use report. There are a number of events scheduled for November 6 and 7, following up on the Makin, VAPS workshop. Also, on November 7, a body worn camera workshop will be held; and on November 8, the VQiPS and VTAG leadership will be planning for future events. The events will be held at Johns Hopkins.

**Radio Programming Compatibility Requirements (Radio PCR) Working Group, Dan Robinson, Chair.**

Mr. Robinson said the PAM Tool Version 7 has been finalized and will be announced as available within the next 30 days. The group has revised the information tab with enhanced instructions, and made corrections and edits to various data fields, following a comprehensive QA analysis. The revised version is compliant with the current version of the National Interoperability Field Operations Guide (NIFOG).

This Working Group will be shifting its work from the Technology and Broadband Committee to the Interoperability Committee, effective January 1, because it better aligns with the goals of the tool to enhance interoperability.

Motion and Vote: Jim Goldstein, International Association of Fire Chiefs (IAFC), moved to shift the Radio PCR Working Group from Technology and Broadband to the Interoperability Committee. John MacIntosh, Association of Fish and Wildlife Agencies (AFWA), seconded. Approved.

**Spectrum Management Committee, Don Root, Chair; Charlie Sasser, Vice Chair  
Committee Issue Update, Don Root.**

T-Band. Mr. Root said the T-Band (470-512 MHz) spectrum is allocated for public safety and industrial/business use in 11 top urban areas. Section 6103 of P.L. 112-96 requires the FCC to begin auctioning public safety T-Band spectrum by February 2021 and to clear public safety within 2 years of the auction close. In December 2017, NPSTC formed a T-Band Coalition. As a result of Coalition actions, H.R. 5085 was introduced in February 2018, and S.3347 was introduced in August 2018 to repeal Section 6103. As of August 27, 2018, H.R.5085 has 19 co-sponsors in the House, and S.3347 has 4 co-sponsors in the Senate.

4.9 GHz. The FCC issued the Sixth Further NPRM on 4.9 GHz in March 2018, claiming the band is underutilized. The NPRM proposes some rule changes NPSTC previously recommended; however, some FCC Commissioners expressed interest in reallocating and auctioning the band. NPSTC filed comments on July 6, to set the record straight on current usage and recommend provisions for UAS and robotics and sharing of the band with CII. NPSTC filed reply comments on August 6, to highlight the lack of support for commercial use and to respond to the FCC call for dynamic spectrum sharing in the band.

6 GHz. Public safety, CII, and commercial users share the 6 GHz band. The band is heavily used for fixed microwave links. Tech companies are promoting sharing the band for unlicensed WiFi. NPSTC set forth the need to protect public safety operations. The FCC Chairman advised that the Commission plans an NPRM on band sharing for this fall. The FCC must report on proposals to Congress by November 2, per the Spectrum Pipeline Act. NPSTC will file comments on Pipeline Act Report Public Notice, which are due to the FCC on September 11.

9-1-1 Z-Axis Location – Marilyn Ward, NPSTC Executive Director. Ms. Ward said the Governing Board has previously discussed the need for accurate location requirements regarding the z-axis, or vertical accuracy, for indoor 911 location. The CTIA and wireless carriers have recommended a z-axis floor level accuracy of +/- 5 meters, i.e., a total variation of 10 meters, which is approximately 32 feet or 3 floors. Mr. Goldstein said, in the past, the proposed rules for the z-axis were much tighter. They were loosened by a promise of dispatchable location. The IAFC, International Association of Chiefs of Police (IACP), and NASEMSO are all on a CTIA advisory council. The National Sheriffs Association (NSA) was not originally part of the group, but the NSA has also been working on the issue. There was a report from CTIA examining findings from two vendors on the z-axis. Public safety objected to those findings, and CTIA agreed to remove the findings, but in a cover letter to the FCC, CTIA included the comment that +/- 5 meters was acceptable.

Public safety has agreed that z-axis accuracy of +/- 3 meters would be much better. CTIA announced yesterday that it was looking at hybrid technology [Bluetooth, WiFi, and GPS] recently. Mr. Goldstein and Mr. McGinnis do not recall that ever being discussed. One of the problems with the carriers and CTIA is the lack of transparency. Hybrid technology may help commercially, but it will still not meet public safety mission critical needs.

Sharon Counterman, National Emergency Number Association (NENA), said NENA agrees 3 meters is the way to go, saying there are three or four companies today that are not major carriers and that do have location technology applications. She has seen the Carbyne version in action, which was able to track her through an app on her phone as she moved through a building, with her video displayed at the same time. The technology is available, but public safety needs to push the carriers to make sure this technology is available for use by 9-1-1.

Mr. Goldstein said none of those companies was tested by CTIA, but the two that were tested were within 5 meters, and one was within 1.8 meters. He thinks the carriers are relying more on commercial apps and not on technology. Mr. McGinnis agreed with Mr. Goldstein, saying public safety keeps making the case over and over and is not heard.

Derek Poarch, Association of Public-Safety Communications Officials (APCO) International, agreed that the carriers are stalling over finances. The public safety position has been made clear in the testbed committee that he serves on. He said APCO will fiercely oppose the CTIA standard. He recommended that NPSTC and the other Governing Board organizations should file comments.

Motion and Vote: Mr. Goldstein moved that NPSTC express the Board's concerns on the z-axis floor level accuracy to the FCC. Mr. Poarch seconded. Approved.

#### **FCC Filings, Charlie Sasser.**

Mr. Sasser reviewed NPSTC's filing and comments to the FCC to date.

Date Filed	Topic	Type of Filing
8/6/18	4.9 GHz Sixth FNPRM	Reply Comments
7/30/18	Radwin Petition on 5 GHz Rules	Comments
7/6/18	4.9 GHz Sixth FNPRM	Comments
7/6/18	Globalstar Petition re Noise Floor	Comments
6/20/18	New Technology/Services NPRM	Reply Comments
3/12/18	Medical Device Waiver Request	Comments
1/31/18	TAC Spectrum Policy Rec.	Comments
Ongoing	Extensive work on T-Band	Coalition Support

### Federal Partners Update

**Federal Communications Commission (FCC), Michael Wilhelm, Chief, Policy and Licensing Division.** Mr. Wilhelm reported on actions at the Commission. He said, in August, the Commission announced that public safety could have access to 50 federal interoperability channels in a greatly simplified application process.

He said the Commission has received some notice of agencies using the interoperability channels for routine duties. Routine communications are secondary, and the channels are to be used strictly for interoperability. The Commission advised to avoid secondary use of UHF and VHF channels. The 800 MHz interoperability channels are to be used exclusively for interoperability, and agencies violating this use will face action.

The Commission has rebanded over 2,000 800 MHz systems and retuned or replaced over 1 million radios. Only 2 licensees remain to be retuned in Mexico, 14 in California, and 29 in Texas. The stations remaining to be retuned are blocked by stations in Mexico. Mexico has been very responsive to the issue. The Commission is working with IFT, the FCC's Mexican counterpart, to accelerate the rebanding. The agencies are also encountering some unlicensed stations and are working to shut them down in conjunction with IFT.

In February, the Commission clarified 700 MHz rules as they applied to base stations, but not affecting vehicular repeaters. The rules require licensees to save information on assertions made by vendors, which state that their radios are P25 compliant.

Regarding 4.9 GHz, the Commission received several very useful comments on the band. The Commission is considering issues, including the expansion of aggregation bandwidth to 40 MHz, the reservation of 5 MHz for aeronautic and robotic use, a requirement for new applicants to undergo frequency coordination, a proposal to grandfather existing systems, and to reduce the construction period from 18 to 12 months. There is also a request to open the band to critical infrastructure. Reply comments were filed in August. The Commission analyzed comments from NPSTC and APCO on the calculation of the penetration of 4.9 GHz. Some of the observations are very valid, and the FCC will revise its estimate.

The Commission is also examining how the public accesses emergency services. The Commission established an industry-based testbed on the z-axis and is aware of the objections to the testing techniques. The Commission is giving the objections very careful attention.

In 2013, Kari Dunn was killed in a hotel, while her children watched, unable to call 911 directly from the hotel room. This resulted in a law, known as Kari's Law, requiring users of multi-line telephones to be able to dial 911 directly. The Commission will consider rules to implement Kari's Law. In March, Congress adopted the Ray Baum Act, which requires that a dispatchable location be sent to PSAP when a 911 call is initiated. The Commission is required to enact rules to implement the legislation by September 2019. In March, the Commission issued a Notice of Proposed Rule Making (NPRM) to eliminate the delay caused by 911 mis-routing.

Mr. McIntosh asked if the reference to the federal interoperability channels referred to those in the NIFOG. Mr. Wilhelm said this application is limited to mobile and portable applications, not base stations. The interoperability frequencies vary from region to region, so overall application would not work. A state could file for available frequencies in its region.

**Charles Cooper, Field Director, Enforcement Division.** Mr. Cooper said the development and implementation of the interference complaint intake portal, which allows licensees from public safety and commercial entities to report online directly to the Bureau, is moving forward. The Bureau has received funding to accomplish this and will be developing and testing the portal soon. The Bureau's field modernization program required that the savings were to be rolled into training and equipment for the field. This is now happening with the purchase of new electronic equipment for field engineers to resolve interference from intermittent channel use and low power stations.

The Spectrum Enforcement Division released a citation and order to Baofeng, an Asian company that markets two-way radios, which allow front panel programming of spectrum that is not authorized, specifically spectrum affecting the aeronautical and maritime channels. Mr. Haller said non-certified radios that use emergency or public safety frequencies are a big issue for the Land Mobile Communications Council (LMCC). He commended the Bureau on its enforcement effort.

#### **Interoperability Committee, John Lenihan, Chair; Jason Matthews, Vice Chair**

Chief Lenihan reported the Interoperability Committee participated in OEC's NECP working group, including Governing Board members, Charlie Sasser and Lloyd Mitchell. The group was able to refer to the Radio Interoperability Best Practices report as a resource.

**Common Channel Naming Working Group, Don Root, Chair.** The Working Group is examining how MCPTT interoperability talkgroups work and how MCPTT talkgroups will support nationwide interoperability. It is finalizing a report on how MCPTT will support nationwide voice interoperability.

Key findings include:

- Interoperability will continue to be managed by local, regional, and state public safety entities.
- Common interoperability talkgroups will not likely exist on a national basis (e.g., there will be no MCPTT equivalent of 8CALL90, VCALL10, etc.).



- Local, regional, and statewide managed MCPTT interoperability talkgroups must be made available to itinerant first responders, who have traveled outside their service area geography.

Key recommendations include:

- Further study of this topic is needed after FirstNet's implementation of MCPTT is finalized.
- Local, regional, and state collaboration will be critical in planning MCPTT interoperability resources.
- A common naming scheme for interoperability talkgroups is essential in order to convey meaningful information to first responders.
- Regional and state entities should examine LMR interoperability plans to create a blueprint for management of MCPTT resources.

The report should be ready for review by the full Interoperability Committee in October, with a final report for Governing Board approval in November.

**Emergency Medical Services (EMS) Working Group, Paul Patrick, Chair.** Mr. Patrick reported the EMS Working Group is continuing to review broadband data requirements of advanced imaging mobile units, including vehicular stroke assessment vehicles. The group has initiated a quarterly EMS media review roundtable, in which the Working Group discusses news articles and announcements impacting EMS and technology. The Working Group has completed its report, "Prehospital Notification in Time Sensitive Medical Emergencies," outlining the need for a comprehensive technology and procedure review by EMS agencies. Motion and Vote: Paul Fitzgerald, National Sheriffs' Association (NSA), moved to approve the EMS Working Group report, titled, "Pre-hospital Notification in Time Sensitive Medical Emergencies." Mr. Sasser seconded. Approved.

**Cross Border Working Group, Steve Mallory, Chair.** Reporting for Mr. Mallory, Chief Lenihan said the Working Group continues to follow DHS OEC updates on cross border issues, including the 700 MHz Air to Ground assignments and rules and new VHF frequencies to support cross border activity. The Working Group has completed its "Cross Border 9-1-1 Data Sharing Report," detailing best practices for managing cross border emergency calls. Motion and Vote: Paul Szoc, International Municipal Signal Association (IMSA), moved to approve, "Cross Border 9-1-1 Data Sharing Report." Mr. McIntosh seconded. Approved.

### **Upcoming Meetings**

The next meeting will be by teleconference on Thursday, January 10, 2019.

**Adjournment.** Mr. Goldstein moved to adjourn the meeting. Mr. Corey seconded. The meeting adjourned at 2:50 p.m. ET.