National Public Safety Telecommunications Council (NPSTC)
Full NPSTC Meeting by Teleconference
July 26, 2016

Welcome and Opening, Ralph Haller, Chair, National Public Safety Telecommunications Council (NPSTC). Mr. Haller called the meeting to order at 11:00 am EDT. Participants on the phone were asked to send a record of their attendance to attend@npstc.org. Mr. Haller described the process for Governing Board voting and submitting questions to the Governing Board.

Federal Partners Update

Department of Homeland Security (DHS), Office of Emergency Communications (OEC), Chris Essid, Deputy Director. Mr. Essid reported on the recent activities ongoing at OEC. The National Governors Association (NGA) Policy Academy kicked off on May 16 and 17, in Idaho, with good discussion on the sustainability models. OEC continues to work to sustain LMR capabilities but to also prepare for the adoption and integration of broadband technologies. The Policy Academy focuses on all the lanes of the interoperability continuum. OEC hosted a call on the Interoperable Communications Assessment program focusing on the need to consider the full range of communications capabilities. The work will result in best practices that can be applied nationwide. Mr. Essid congratulated Charlie Sasser on his new role as Spectrum Management Committee Vice Chair.

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

Emergency Medical Services Working Group. The Working Group is finalizing an outreach paper, titled, *"10 Reasons You Need to be Engaged with FirstNet"* to encourage more EMS personnel to interact with FirstNet to ensure EMS needs will be met. They are also focusing on how EMS agencies in rural areas will use FirstNet. Finally, they are beginning to research GPS medical alarms to learn more about these systems.

Cross Border Working Group. On June 30, 2016, the Federal Communications Commission (FCC) and Canada's Innovation Science and Economic Development (ISED) jointly released documents that announced new understandings on cross border base station placement. The Public Notice complements the FCC notice on cross border use of portable and mobile radios issued in November. This announcement and other issues were presented at the recent Canada-United States Communications Interoperability Working Group (CANUS CIWG) meeting in Ottawa with OEC and Public Safety Canada. There is continuing work on cross border 911 data sharing and best practices for emergency vehicle border crossings.

Radio Interoperability Best Practices Working Group. The following Best Practice Statements are either near completion or are in progress: Radio Channel Naming, Training, Change Management, and Infrastructure Management.

Common Channel Naming Working Group. The Working Group recently published recommendations for Intrastate Channel Naming. The Common Channel Naming Standard is nearing the end of the American National Standard Institute (ANSI) standardization update process to include new 700 MHz frequencies. <u>Motion and Vote</u>: John Wright, Association of Public Safety Communications Officials (APCO) – International, moved to change the status of the Working Group to monitoring status as it has completed current work. Nick Cadena, NASTD National Association of State Technology Directors (NASTD), seconded the motion. Approved.

Encryption Task Force, Jason Matthews, Chair. The original intent of this Task Force was to learn if any agencies were using encryption on FCC-designated interoperability channels. The FCC rule issued in April mandates the use of analog FM for mobiles/portables on FCC-designated interoperability channels in the VHF, UHF, and 800 MHz Band. NPSTC issued a question via the Participants Forum on July 13, 2016, asking for feedback on the new FCC rule. As of July 22, 2016, there were 41 responses from a mix of local and state law enforcement and fire. There was overwhelming support for the FCC analog FM rule. Only one response raised concerns. NPSTC will follow up with further study on how agencies are using encryption.

There was also discussion on potential confusion over the role of Project 25 (P25) and interoperability frequency programming. Agencies are being urged to use P25equipment as the standard for digital communications but the FCC is requiring analog on the interoperability channels. Chief Lenihan said the FCC was trying to address the multiple digital formats that are available, including MDR and TETRA. Analog is the lowest common denominator for interoperable communications. P25 radios, if properly programmed, automatically adapt to an analog signal coming into their receivers and will respond back in analog.

FirstNet NPSBN Development, Paul Patrick, Public Safety Advisory Committee (PSAC). Mr. Patrick reported FirstNet is in the evaluation phase for procurement of the network and on track to make the award in November. Due to the rules on federal acquisition, Mr. Patrick said he could not provide more details on the procurement process. FirstNet has two priorities currently, positioning the organization for whoever the partners may be and preparing the network for development, deployment, and adoption. The Board is moving to a more operational and customer service orientation and, to that end, has created two new units. The Chief Customer Officer, Rich Reed, will deal with advocacy, consultations, state plans, and outreach, including product management and marketing. A new Network Program office, headed by Steve Fletcher, will coordinate with states and territories on the RAN operation.

FirstNet is continuing its consultations on state plans; once a partner is on board, the focus will be on working directly with the states as they move forward. It continues to conduct executive consultations with state leaders. FirstNet completed their 31st state consultation last week.

The PSAC's Local Control Task Team has completed its work, which is ready for submission to FirstNet, and has moved forward in establishing its new Federal Partners Working Group. The next PSAC webinar will be held on October 6 with an in-person meeting in December held in conjunction with the FirstNet Board meeting in Sacramento, CA.

Spectrum Management Committee, Don Root, Chair; Charlie Sasser, Vice Chair

Spectrum Management Committee Update, Don Root

4.9 GHz. There has been an open FCC rulemaking to revise the rules for this spectrum band since June 2012. NPSTC submitted its 4.9 GHz National Plan Recommendation in October 2013. APCO filed its 4.9 GHz Task Force Report in September 2015. Both NPSTC and APCO emphasized the need for required frequency coordination in the band. Some recent proposals have called for dynamic spectrum sharing with consumer access through carriers or unlicensed use. An FCC Further Notice of Proposed Rulemaking is expected.

5.9 GHz. The FCC has allotted 75 MHz at 5.9 GHz for DSRC [Dedicated Short Range Communications] for intelligent transportation and connected vehicles. The spectrum is also sought by WiFi proponents for consumer use. There is no agreement to date on the sharing approach. An FCC Public Notice proposing a test plan framework and seeking to refresh the record was issued June 1, 2016. NPSTC has filed Comments and Reply Comments.

Interference Protection Working Group. The FCC issued a Public Notice on June 15, 2016, seeking input on the radio spectrum noise floor. The FCC's Technological Advisory Council (TAC) is studying the issue. Comments are due August 11, 2016. The Spectrum Management Committee is planning a draft response covering noise floor impact from energy efficiency lighting and RF from wind farms.

Deployable Trunked Systems Task Force, Don Root. NPSTC and the National Regional Planning Council (NRPC) recommended six former 700 MHz band reserve channels for deployable trunked systems. The FCC approved the recommendation. A Wide Area Communications Network (WACN) has been assigned by the Telecommunications Industry Association (TIA) and System IDs are being coordinated and tracked in the Computer Assisted Pre-coordination Resource and Database System (CAPRAD). On the southern border, Mexico's plan to use the Asia Pacific 700 MHz bandplan causes incompatibility with the US bandplan in the U.S./Mexico border area. The issue is being discussed in affected regional planning committees (RPCs).

The FCC plans to negotiate a treaty change with Mexico for the entire 700 MHz band. NPSTC will still need to monitor that as it impacts all the narrowband and broadband public safety spectrum along the Mexican border. As part of the negotiations, the FCC is strongly looking at swapping a .5 MHz portion of the band at the highest frequency for a .5 MHz portion contiguous with the lower U.S. primary spectrum for narrowband use. Sharing with Mexico has always been on a 50/50 basis. The two control channels identified in the report are located in the top portion of the band that may become Mexico primary. To solve this the Task Force will recommend using channels 2 and 3 of the deployable channels as control channels for agencies operating in the Mexico sharing zone. The Task Force will also recommend the border regions reserve two additional channels for deployable use in the border sharing zone. The changes will require modifications to the report that the NRPC and NPSTC Boards will need to approve. These changes do not require FCC action.

Federal Communications Commission (FCC) Filings, Stu Overby. Mr. Overby reported on the nine filings NPSTC has made in 2016 to date. Regarding the August 11 filing on the noise floor, NPSTC is noting some of the concerns from a public safety perspective including RF interference and wind farms. NPSTC has supported lab and field testing with vehicles regarding the open DSRC PN. There is 580 MHz of unlicensed spectrum available for WiFi use, which NPSTC will bring to the Commission's attention. In the Ligado filing, NPSTC proposed comprehensive testing to ensure there will be no interference with the

National Weather Service, industry, and public safety. In the earlier filing, NPSTC supported Ligado's request to delete the 1545-1550 MHz spectrum from their license.

Date Filed	Topic	Type of Filing
8/11/16 (Planned)	Noise Floor	Comments
7/22/16	5.9 GHz DSRC	Reply Comments
7/13/16	Interference Portal	Letter
7/8/16	4.9 GHz	Ex Parte (#2)
7/7/16	5.9 GHz DSRC	Comments
6/21/16	Ligado 1675-1680 MHz	Comments
6/3/16	T-Band Update Report	Ex Parte
5/23/16	Ligado 1545-1555 MHz	Comments
4/21/16	4.9 GHz	Ex Parte (#1)
1/13/16	Wireless Emergency Alerts	Comments

Federal Partners Update Continued

Federal Communications Commission (FCC), David Furth, Deputy Bureau Chief, Policy and Licensing Division, Public Safety Homeland Security Bureau (PSHSB). Reporting for David Furth, Roberto Mussenden and Brian Marenco participated in the call. Mr. Marenco reported on the PN that released guidelines for licensees seeking to roam in and out of Canada, improving the ability of first responders to communicate across the border. A year ago, the two parties signed a statement of intent, permitting public safety to roam with a handheld or portable, with no other permits required. This action was an update of a treaty from the 1950s. On June 30, 2016, the FCC and ISED jointly released documents that enhance cross border communications. The FCC Public Notice provides guidance to U.S. public safety licensees seeking to: (1) roam into Canada; (2) communicate from the U.S. through base station

repeaters in Canada; or (3) host Canadian licensees seeking to communicate through base station repeaters in the United States. Canada's notice provides guidance to Canadian public safety agencies seeking to place base stations in the U.S.

Mr. Marenco said the Commission recently released an Order regarding the 800 MHz National Public Safety Planning Advisory Committee (NPSPAC) band to clarify that digital transmitters operating in that band must use emission mask H. The Commission also adopted a requirement for mobile and portable radios to have an analog FM capability when operating on the UHF, VHF, and 800 MHz bands.

Mr. Mussenden said the FCC issued a draft Order to extend eligibility on the interoperability channels to the railroad police. The Commission also released an Order on relocation of incumbents in FirstNet spectrum and is working on a draft NPRM on how FCC will address state opt-out requests. In February, the Commission had an Order updating the rules on the TIA 700 MHz narrowband order, the Compliance Assessment Program (CAP) certification, and when CAP certification needs to occur.

The Commission continues to work on 4.9 GHz and has generated a large record. The goal is to maximize public safety use of the band, but to also allow the opportunity for growth and greater flexibility in use of the band. Also to decide: Should the band management be dynamic or should rules be established? The Commission is approaching the resolution of 800 MHz rebanding, with 99 percent of licenses on the Canada border completed. On the Mexican border, 57 licensees are moving forward and there are about 100 channels blocked by incumbents in Mexico. The FCC continues to work with regulators to clear those channels so U.S. licensee can retune their channels. Work on 800 interstitials is ongoing.

Mr. Mussenden said the Public Safety Support Center (PSSC) is celebrating its 1-year anniversary. Licensees can email the PSSC with questions, which eliminates the general call center delays. He complimented the staff at the Gettysburg office, saying they are keeping well ahead of the number of applications they handle, completing between 3,000 and 5,000 applications in a month.

In response to a comment about approvals from Canada, Mr. Haller noted Canada changed its licensing system creating a longer approval time, saying there might be a backlog as they adjusted to the new system. On behalf of NPSTC, Marilyn Ward, NPSTC's Executive Director, thanked Mr. Marenco for his many years of work on behalf of public safety to improve cross border communications.

Public Safety Communications Research (PSCR), Dereck Orr, Division Chief, NIST Public Safety Communications Research. Mr. Orr said the Public Safety Communications Research (PSCR) Broadband Stakeholder meeting in San Diego enjoyed great participation and panels. PSCR will publish conference materials in August. The Analytics Summit is next week in Boulder, CO, and they are expecting between 70 and 90 attendees. PSCR is developing initial prize challenge packages for funding mission critical voice for the first quarter of FY 2017. The User Interface Working Group, meeting to develop a user interface roadmap, is in the third month of meetings expected to continue into the fall. Those interested are invited to attend. PSCR has launched a new quarterly newsletter and Mr. Orr invited attendees to sign up to receive the newsletter on the PSCR website. Mr. Sorley congratulated Mr. Orr on the prize challenge presentation, which he called exciting and well done. He also congratulated Tracy McElvaney and Jeb Benson for being extremely helpful and providing assistance on direct mode explanations to several NPSTC Working Groups studying the issue.

Technology and Broadband Committee, Tom Sorley, Chair, Andy Thiessen, Vice Chair, and Michael Britt, Vice Chair

Broadband Emerging Technologies Working Group. The Working Group has hosted several well-attended presentations including discussion of the FirstNet Web Status Page and recommendations on what elements that page should contain. Guest speakers have included representatives of the National Institute of Standards and Technology (NIST), which provided an overview of sensors and the Internet of Things (IoT); a healthy panel discussion on State Alternative Planning Approaches related to opt in/opt out with FirstNet; and a presentation on the NIST Smart Cities Project. The Working Group will be scheduling future presentations on these topics: International LTE deployments in the United Kingdom (UK) and Korea and NG911 integration with FirstNet. The UK presentation will probably be scheduled in October.

LMR to LTE Migration Working Group. The Working Group has created five use cases to validate existing NPSTC requirements while also checking for new requirements affecting mission critical voice and the dual existence of both LMR and LTE voice technologies. The Working Groups are coordinating their efforts with PSCR to better understand the technical complexity of direct mode/off network communications and monitoring 3GPP and FirstNet announcements that will impact LMR and LTE integration. The group plans to build additional use cases.

Broadband Deployable Systems Working Group. The Working Group has developed nine use cases documenting various configurations for broadband deployable systems, including backpack, vehicular, towed, and airborne. There has been an excellent exchange between public safety and industry. They are beginning work on a master report with estimated completion by early September and finalizing an Incident Commander checklist with recommendations on deployable systems usage.

Radio PCR Working Group. Radio PCR is performing a quality assurance check on a new version of the PAM Tool with the addition of new 700 MHz channels. As updates are made, the group will be asking the industry partners to verify that their subscriber information listed in the PAM Tool is correct. Radio PCR is planning a face-to-face meeting on September 20-21, in Houston, TX.

UAS/Robotics Working Group. UAS/Robotics is focused on learning about various uses and considerations of unmanned aerial systems and robotics. This group is interacting with the Broadband Deployables group. Presentations have included the following:
- Larimer County UAS Program (accident scene reconstruction)
- Use of UAS for SAR (by Texas A&M University)
- Regulatory guidance on UAS (by Federal Aeronautics Administration)
- Michigan State Police Aviation UAS program
- Persistent Close Air Support, State of Arizona

The Working Group will develop outreach documents on considerations for public safety agencies planning UAS program implementation; current uses of UAS/robotics by public safety; and public safety communications aerial platforms via UAS. In response to a question as to whether the group is reaching out to the FCC on broadband for air operations, Dr. Britt said not yet, but it will likely do so. Mr. Haller said NPSTC's 4.9 GHz plan included a channel for UAS/robotics and air-to-ground usage. Mr. Wright said he recently viewed a presentation where Esri, an international supplier of geographic information

system software, web GIS, and geodatabase management applications, demonstrated the use of drones to provide accurate maps for location. Mr. Sorley asked Dr. Britt to include an Esri presentation for a future meeting.

VTAG Working Group. The VTAG assisted in the review of a policy considerations document recently released by the Video Quality in Public Safety (VQiPS). Members of the VTAG supported the Video Analytics in Public Safety (VAPS) conference sponsored by NIST and they are assisting with program content for the upcoming VQIPS Annual Workshop, being held in Seattle, WA on August 31 and September 1.

3GPP Update. Mr. Sorley encouraged those interested to attend the Committee meetings to follow the standards effort underway with 3GPP. 3GPP has recently settled on a common denominator CODEC for mission critical video.

Internet of Things (IoT) Study. Mr. Sorley suggested NPSTC consider a Task Force to research issues surrounding IoT, the state of the industry, and what NPSTC could do to assist in this scope of work. There was consensus that this was a valuable issue for further research.

Member Update

Open Mobile Alliance (OMA), Frank Korinek, Member Representative. Mr. Korinek briefed on new work at OMA including significant advances in IoT enablers, especially lightweight machine to machine (M2M); a focus on the transition to a virtualized network and the resulting impact on the services space; and organic updates to core enablers such as device management and location. There are new location work items related to indoor navigation and continuing updates to the protocols and test suites supporting RCS [Rich Communications Suite]. Mr. Korinek's complete presentation on OMA initiatives is available on NPSTC's Meetings Page.

Alliance for Telecommunications Industry Solutions (ATIS), Brian Daly, Member Representative. Mr. Daly reported that ATIS is developing solutions in support of the November 2014 voluntary agreement by AT&T, Verizon Wireless, T-Mobile, Sprint, APCO, and NENA on cell phone location standards. ATIS completed the initial National Emergency Address Database (NEAD) requirements in support of the FCC's 4th R&O on Wireless E911 Location Accuracy Requirements. NEAD will store the location of a "beacon" device (e.g., WiFi, Bluetooth), which will allow carriers to query for delivery of a 911 caller's dispatchable location.

ATIS developed Wireless Emergency Alert (WEA) solutions per the WARN Act and completed three feasibility studies in December 2015 to address FCC Communications Security, Reliability & Interoperability Council (CSRIC) IV recommendations. ATIS was selected as Program Manager for the Test Bed LLC (created under CTIA) to help administer and execute the near- and long-term Test Beds of wireless indoor location technologies. The complete ATIS presentation is available on NPSTC's Meetings Page.

New Business

Upcoming Meetings and Events, Sandy Dawkins, NPSTC Coordinator. NPSTC will participate in the APCO Conference held from August 14-17, 2016, in Orlando, FL. NPSTC will be at Booth #565. NPSTC will

hold an in-person meeting on Wednesday, September 28, and Thursday, September 29, 2016, in Washington, D.C. Invitational Travel assistance for Governing Board members has been approved. Attendees should reserve hotel rooms early because they fill up quickly. There will also be an in-person meeting during the week of January 16 in a to-be-determined location. Orlando, FL, has been proposed. Mr. Haller said staff is looking for other possible locations in Orlando such as a government building. If member organizations can pay for their representative travel, please send Ms. Dawkins information on plans to attend.

Adjourn
Mr. Cadena moved to adjourn the meeting; Mr. Wright seconded. Meeting adjourned at 1:09 pm EDT.