2015 Public Safety Broadband Stakeholder Meeting

Session Information & Abstracts

- *All sessions will take place in the Grand Ballroom*
- *Presentations can be found at* http://www.pscr.gov/about/highlights/psbb_062015/
- *All sessions will include dedicated Q&A time*

Session 1: Public Safety Research & Development Roadmapping – Paving the Way Today for Tomorrow's Communications Needs

Presenter: Dereck Orr, PSCR

Description: In November 2013, PSCR held a Public Safety Broadband Research and Development (R&D) Roadmap Workshop to identify future public safety communications technology needs (5-20+ years out). Following the 2013 Workshop, PSCR developed a Location-based Services R&D Roadmap for public safety. In 2015 PSCR will develop an Analytics R&D Roadmap for public safety. Continuing the progress from the workshop and roadmapping efforts, PSCR will:

- Provide an update on the Location Based services roadmap, and
- Discuss current Data Analytics efforts and collect data inputs from conference participants.

Session 2: International Standards Panel – Lessons Learned From Around the World

Speakers: Andrew Thiessen, PSCR; Gordon Shipley, UK Home Office; Daejung Kim, MSIP, Rep. of Korea; Joe Fournier, Centre for Security Science, Government of Canada

Description: Requirements and standards are many times the beginning of the product development life cycle that results in equipment that can be used by the public safety community. This session will detail how the PSCR team collaborates internationally and ensures that the public safety community remains firmly in the driver's seat for articulating their requirements, and how those requirements in turn translate into action for the development of standards. Representatives from the UK, South Korea, and Canada will provide presentations highlighting their specific efforts and progress.

Session 3: Public Safety Priority – Evaluating LTE Tools that Address Network Congestion and Priority

Speakers: Tracy McElvaney, PSCR; Brian Kassa, FirstNet; Barry Fraser, PSAC

Description: Public Safety, National Security, and Emergency Preparedness personnel are quickly moving toward broadband data, video, and voice capabilities. As the demand grows for broadband access, so does the need to ensure priority access to First Responders

in times of crisis. PSCR has been evaluating the state-of-the industry with respect to standards based Priority, Pre-emption, and QoS features in support of planning, design and implementation of both the National Public Safety Broadband Network as well as the commercial rollout of Next Generation Network Priority Services. In addition to providing a status on the evaluation projects, this session will provide a practical example of "The Congestion Problem", detailing how the standards based Priority, Pre-emption, and QoS features can help.

Session 4: DHS OIC APEX Updates
Speakers: John Merrill, DHS S&T; Shawn McDonald, DHS S&T; Kathleen Deloughery, DHS S&T; Cuong Luu, DHS S&T; Stephen Dennis, DHS S&T
Description: Responders today still rely on radio communications and PPE with insufficient threat protection. With enhanced protection and timely, actionable information, responders of the future can operate more safely and effectively. As the primary research and development arm of DHS, S&T looks ahead—20 to 30 years out—to determine where to dedicate R&D resources now. In FY 2015, DHS S&T finalized its visionary goals following an extensive collaboration effort that yielded input and suggestions from thousands of stakeholders in government, academia and the nation's private sector industrial base. From there, the Directorate created a series of high priority, high value Apex programs and "engines" that are capable of delivering solutions typically within 3-5 years. The Next Generation First Responder (NGFR) is such a program. We envision first responders who are protected, connected and fully aware - enabling faster, more efficient and safer response to threats and disasters of all sizes. NGFR will have scalable and modular ensemble that includes an enhanced duty uniform and PPE, wearable computing and sensing technology, and robust voice and data communication networks. NGFR's cutting-edge technologies will accelerate decision-making and improve response to better safeguard lives and property.

Session 5: Extended Range Communications Testing – Pushing the Limits of LTE Coverage
Speakers: Chris Redding, PSCR; Camillo Gentile, PSCR
Description: Network coverage is essential for public safety communications but can vary greatly from dense urban cities to remote areas. Extended cell LTE coverage can provide wide coverage in rural areas, which enhances communications capabilities for public safety.

PSCR is testing and evaluating extended cell coverage, which extends an LTE cell radius beyond the typical range of 2-3 miles to a range of 62 miles. This session will discuss the Phase II results of the extended cell field testing, measurements, and how this capability could impact the public safety community.

Session 6: Public Safety Analytics Panel
Moderator: Donald Bradshaw, PSCR
Panelists: Bill Schrier, State of Washington OCIO; Dharmesh Tyagi, Nokia; Neal Fishman, IBM; Andrew Weinert, MIT LL

Description: Understanding the distribution of first responder resources and the needs of the public they serve is critical in effectively and efficiently executing the public safety functions. Properly applied analytics in the form of meaningful data analysis and recognition will help public safety entities use communications systems to their potential as well as provide automated feedback of their operational posture and performance.

This session will encompass historical analytic methods in public safety, existing records and technology data sources, political and civil liberties considerations, and future data sources and applications. It will also take a deeper look into a subset of medical analytics applications for first responders as well as the use of data from real events used for training exercises.

Session 7: DHS OEC: The Future is Now
Speakers: Admiral Ron Hewitt, DHS OEC; Richard Tenney, DHS OEC; Tim Runfola, DHS OEC
Description: DHS OEC will review their new ecosystem and National Emergency Communications Plan (NECP) and then will deep dive into OEC's innovative offerings and services to include: statewide governance structure updates, mobile Data Coverage Tool, public safety tools, Communication Assets Survey and Mapping Next Generation (CASM Next-Gen), and broadband and 911 TA offering overview.

Session 8: Public Safety Audio Quality Research – Assessing Broadband Codecs in Loud Noise Environments
Presenter: Andrew Catellier, PSCR
Description: When a first responder's life is in danger, the ability to communicate a call for help and to warn others is essential. However, background noise can interfere and even prevent digital communication at the most critical moments. To understand how background noise affects voice communications and to determine what technology improvements are needed to overcome any background noise issues, the PSCR program works with practitioners to develop and implement tests that measure how digital radios operate in the presence of loud background noise.

This session will focus on PSCR's Audio Quality research and results in public safety communications. PSCR will discuss the benefits of transmitting mission-critical voice over LTE networks and its potential to use more bandwidth to code speech.

Session 9: Device-to-Device and High power over LTE – What Public Safety Can Expect
Speakers: Nada Golmie, PSCR; Richard Rouil, PSCR; Camille Gentile, PSCR
Description: Emergency personnel operating in highly stressed environments may find themselves unable to connect to traditional network access points such as cell towers. In such a situation, the ability to maintain communication services when outside of network coverage and in the event of widespread network failures is essential. The Public Safety Communication Research (PSCR) program has been developing modeling and simulation tools to evaluate different functionalities such as the use of high power transmission and device-to-device (D2D) communications. This talk presents key findings associated with

D2D communications in a public safety context. In addition, we will show strategies to maintain network coverage in the case of equipment failures or infrastructure loss and what traffic can be sustained in this case.

Session 10: Merging LMR & LTE Devices – From Standards to Solutions

Speakers: Andrew Thiessen, PSCR; Todd Bohling, PSCR

Description: Interoperability between LMR and LTE networks and/or devices is vital for public safety communications. PSCR is participating in standards efforts and researching solutions for integrating Land Mobile Radio (LMR) and Long Term Evolution (LTE) equipment to enhance a first responders' ability to perform their mission.

This session will discuss the current PSCR standards and research efforts for evaluating the integration legacy LMR devices with LTE and will include a discussion on next steps and future efforts towards LMR to LTE interoperability.

Session 11: Location Based Services for Public Safety Panel

Moderator: Dereck Orr, PSCR

Panelists: Barry Luke, NPSTC; Steve Taylor, Intel Federal LLC, David Gross, Global Wireless Technologies; Christian Militeau, Intrado Inc

Description: The ability to pinpoint a first responder's exact location during an emergency will greatly increase incident command's situational awareness and effectiveness. The Location Services panel will bring together industry, government, and academia to discuss current efforts around 3D geo-location and location-based services for public safety efforts.

Session 12: FirstNet Acquisition and Consultation Update – Requesting Input from Public Safety and Industry

Speakers: Richard Reed, FirstNet; James Mitchell, FirstNet; Brian Hobson, FirstNet; Karla Jurrens, Texas SWIC

Description: This session will provide an overview and highlight upcoming engagement opportunities regarding FirstNet's acquisition process to build, operate, and maintain the nationwide public safety broadband network. Panelists will also discuss consultation and data collection efforts in progress by the states and territories to inform FirstNet's acquisition process and state plans.

Session 13: Public Safety & Cybersecurity – Mobile Applications and Identity Management

Moderator: Nelson Hastings, PSCR

Panelists: Josh Franklin, PSCR; Jeff Cichonski, PSCR; Michael Ogata, PSCR

Description: Public safety users operate in diverse environments that require usable cybersecurity capabilities and features to safely carry out their mission. In support of a nationwide, interoperable public safety broadband network, PSCR has been conducting cybersecurity research that addresses controlling and securing access to the network, its

applications, and its data. This research provides the public safety community with practical, usable cybersecurity information to meet their current and future needs.

This panel provides an overview of current PSCR cybersecurity research efforts. In addition, panelists will present results, lessons learned, and next steps for research efforts related to managing identities for network and application users, developing secure mobile applications, and enabling cybersecurity capabilities within PSCR's 700MHz demonstration network.

Session 14: Local Control – Technology Capabilities to Meet Public Safety's Needs
Speakers: Chris Walton, PSCR; Tracy McElvaney, PSCR
Description: The realization of a Nationwide Public Safety Broadband Network (NPSBN) is rapidly approaching. As it nears, the diverse set of needs across Public Safety agencies is more apparent than ever. Requirements and use cases have been created to describe what types of information public safety desires to control within the NPSBN. PSCR has begun to explore how various types of dynamic local control changes can be applied safely in a standards based LTE network, as well as from where (and through which interfaces) those changes might be applied.