Full NPSTC Meeting
IWCE | Las Vegas, NV

Friday, March 20, 2015

Call In: (510) 227-1018 | Conference ID: 192 7086

Webinar Access Information: https://join.me/NPSTCsupport1

Submit Questions Online
Send email to support@npstc.org

The member organizations of the National Public Safety Telecommunications Council are grateful to the Department of Homeland Security's Science and Technology Directorate, Office for Interoperability and Compatibility (OIC) and the National Protection and Programs Directorate, Office of Emergency Communications (OEC) Points of view or opinions expressed are those of the originators and do not necessarily represent the official position or policies of the U.S. Department of Homeland Security.

Welcome and Opening

- Doug Aiken, NPSTC Vice Chair
  - Call to Order
  - Pledge of Allegiance

Pledge of Allegiance

Role Call
Governing Board Organizations

- American Association of State Highway Transportation Officials (AASHTO)
- American Radio Relay League (ARRL)
- Association of Fish & Wildlife Agencies (AFWA)
- Association of Public-Safety Communications Officials-International (APCO)
- Forestry Conservation Communications Association (FCCA)
- International Association of Chief of Police (IACP)
- International Association of Emergency Managers (IAEM)
- International Association of Fire Chiefs (IAFC)
- International Municipal Signal Association (IMSA)
- National Association of State Chief Information Officers (NASCIO)
- National Association of State Emergency Medical Services Officials (NASEMSO)
- National Association of State Foresters (NASF)
- National Association of State Technology Directors (NASTD)
- National Council of Statewide Interoperability Coordinators (NCSWIC)
- National Emergency Number Association (NENA)
- National Sheriff's Association (NSA)

Welcome

- Associate Organizations
  - Canadian Interoperability Technology Interest Group (CITIG)
  - Utilities Telecom Council (UTC)

- Affiliate Organizations
  - Alliance for Telecommunications Industry Solutions (ATIS)
  - Open Mobile Alliance (OMA)
  - Telecommunications Industry Association (TIA)
  - TETRA Critical Communications Association (TCCA)

Welcome

- Liaison Organizations
  - Federal Commutations Commission (FCC)
  - Federal Emergency Management Agency (FEMA)
  - Federal Partnership for Interoperability Communications (FPIC)
  - National Telecommunications and Information Administration (NTIA)
  - Public Safety Communication Europe (PSCE)
  - SAFECOM Program
  - U.S. Department of Homeland Security, Office for Interoperability and Compatibility (OIC)
  - U.S. Department of Homeland Security, Office of Emergency Communications (OEC)
  - U.S. Department of Justice (US DOJ)
  - U.S. Department of the Interior (US DOI)

Welcome and Opening *(continued)*

- Signing of MOU with APCO Australasia
  - Geoff Spring, Director of International Business Development and Strategy, APCO Australasia

Federal Partners Update

Office for Interoperability & Compatibility (OIC) Update

National Public Safety Telecommunications Council Meeting – Las Vegas / March 20, 2015

Homeland Security
Science and Technology

Dan Cotter

Acting Director
First Responders Group (FRG)
Science and Technology Directorate

OIC Mission

To provide the science and technology that enables emergency communications and facilitates the seamless exchange of information to save lives and protect property.

Homeland Security
Science and Technology

Project 25 Compliance Assessment Program (P25 CAP)

- Description
  - Formal, independent process for ensuring communications equipment declared by the manufacturer to be P25 compliant meets P25 standards
- Value
  - Helps first responders make purchasing decisions by providing the means to verify that equipment is P25 compliant for enhanced interoperability
  - Provides vendors with method for testing their equipment for P25 compliance
  - Promotes effective use of federal grant funding
  - Provides public with Summary Test Reports and Suppliers' Declaration of Compliance documentation online at firstresponder.gov/p25

Project 25 Compliance Assessment Program

Summary Test Report

Airbus DS Communications TB5500i series Base Station/Repeater with VESTA Radio Software

STR-AIRBUS-TB5500i-20140618

P25-CAB-CAI_TEST_REQ – March 2010, Section 2.2.1.1 – Project 25 Phase 1 Common Air Interface Conventional Base Station/Repeater Performance		DTR-P25CAP081015-3434	
TRANSMITTER TESTS 806-870 MHz			
Test Case	Description	Requirement	Results
2.2.8	Unwanted Emissions: Adjacent Channel Power Ratio	≥67dB	P
2.2.14	Transmitter Throughput Delay	≤ 125 ms	N1
2.2.15	Frequency Deviation for C4FM		
	High-Level Signal Deviation	2544 ≤ f_{dev} ≤ 3111 Hz	P
	Low-Level Signal Deviation	848 ≤ f_{dev} ≤ 1037 Hz	P
2.2.16	Modulation Fidelity	≤ 5% (Class A)	P
2.2.18	Transient Frequency Behavior		
	Time Interval t_1 = 20 ms	|Δf| ≤ 12.5 kHz	P
	Time Interval t_2 = 50 ms	|Δf| ≤ 6.25 kHz	P
	Time Interval t_3 = 10 ms	|Δf| ≤ 12.5 kHz	P

PERFORMANCE TESTING - Trunked

P25-CAB-CAI_TEST_REQ – March 2010, Section 2.2.1.2 – Project 25 Phase 1 Common Air Interface Trunked Mode Base Station/Repeater Performance		DTR-P25CAP081015-3434 DTR-P25CAP081015-3516 DTR-P25CAP081015-3528	
RECEIVER TESTS 136-174 MHz, 762-805 MHz, 806-870 MHz.			
Test Case	Description	Requirement	Results
2.1.4	Reference Sensitivity	≤ -116 dBm (Class A)	P
2.1.5	Faded Reference Sensitivity	≤ -108 dBm (Class A)	P
2.1.7	Adjacent Channel Rejection	≥ 60 dB (Class A)	P
2.1.8	Co-Channel Rejection	≤ 9 dB	P
2.1.9	Spurious Response Rejection	≥ 90 dB (Class A)	P
2.1.10	Intermodulation Rejection	≥ 80 dB (Class A)	P
2.1.11	Signal Displacement Bandwidth	≥ 1000 Hz	P

Provides "at-a-glance" summary reviews of test results

Homeland Security

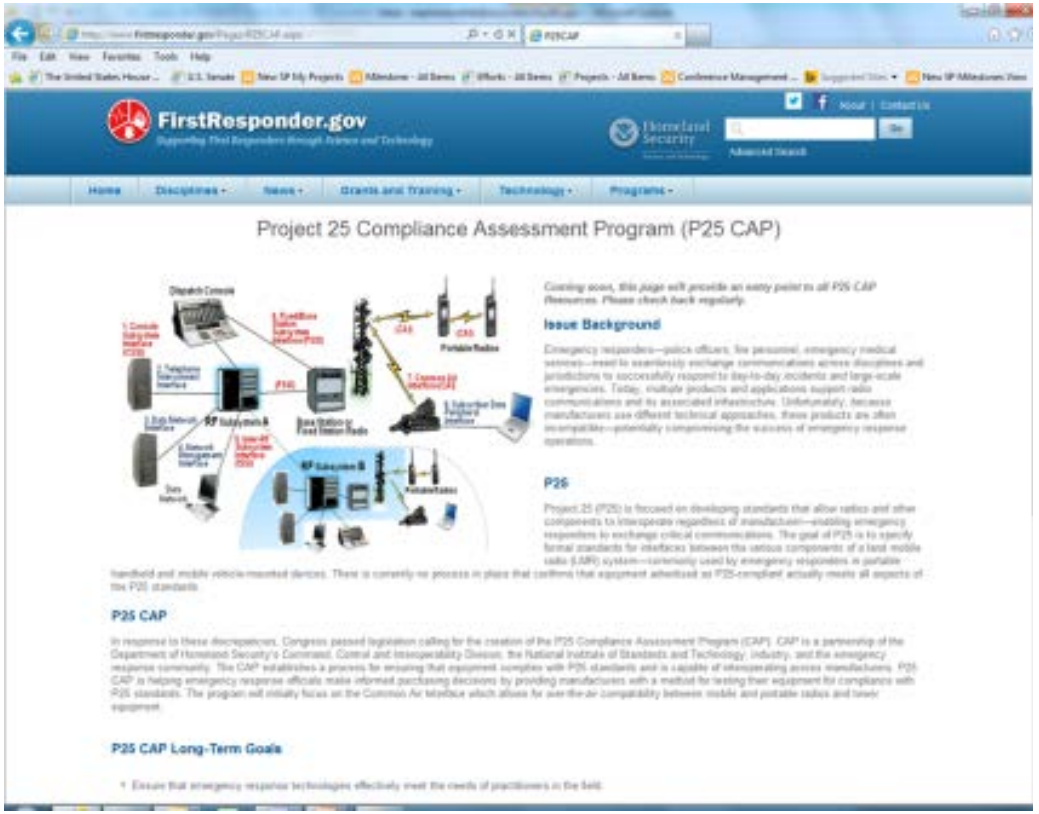
Science and Technology

P25 CAP Update

- OIC and the DHS Office of Emergency Communications recently awarded a grant to the Association of Public-Safety Communication Officials (APCO) to support: 1) OIC execution of P25 CAP activities and 2) the Computer Assisted Pre-Coordination Resource & Database System. Major activities:
  - Reconstitute P25 CAP Governing Board (GB) under existing charter
  - Develop new/revised test procedures after GB reconstitution
  - Ensure governance process/new procedures are informed by stakeholders
- OIC will soon release Compliance Assessment Bulletins to establish program policies, including transition of accreditation services from National Institute of Technology & Standards (NIST) to:
  - American Association for Laboratory Accreditation
  - ANSI-ASQ National Accreditation Board
  - International Accreditation New Zealand

P25 CAP Website Status

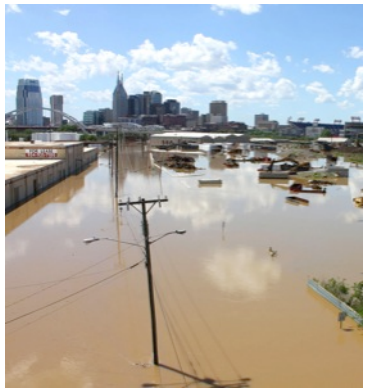
- Dedicated website area accessible from firstresponder.gov home page or at: www.firstresponder.gov/p25cap
- Migration of all P25 CAP documentation from FEMA LLIS website to the new site is complete



Homeland Security
Science and Technology

Apex Programs

Border Situational Awareness	Next-Generation First Responder
Real-Time Bio Threat Awareness	Next-Generation Cyber Infrastructure
Screening	Flood Awareness



Homeland Security
Science and Technology

Next Generation First Responder APEX Program (NGFR)

- Mission
  - Strengthen first responder safety and effectiveness
- Vision
  - An informed, prepared and equipped first responder community to respond and protect the homeland
- Objectives
  - The NGFR is to protected, connected, and fully Aware
- Timeline:
  - 5 Year Effort (2015 – 2019)

Homeland Security
Science and Technology

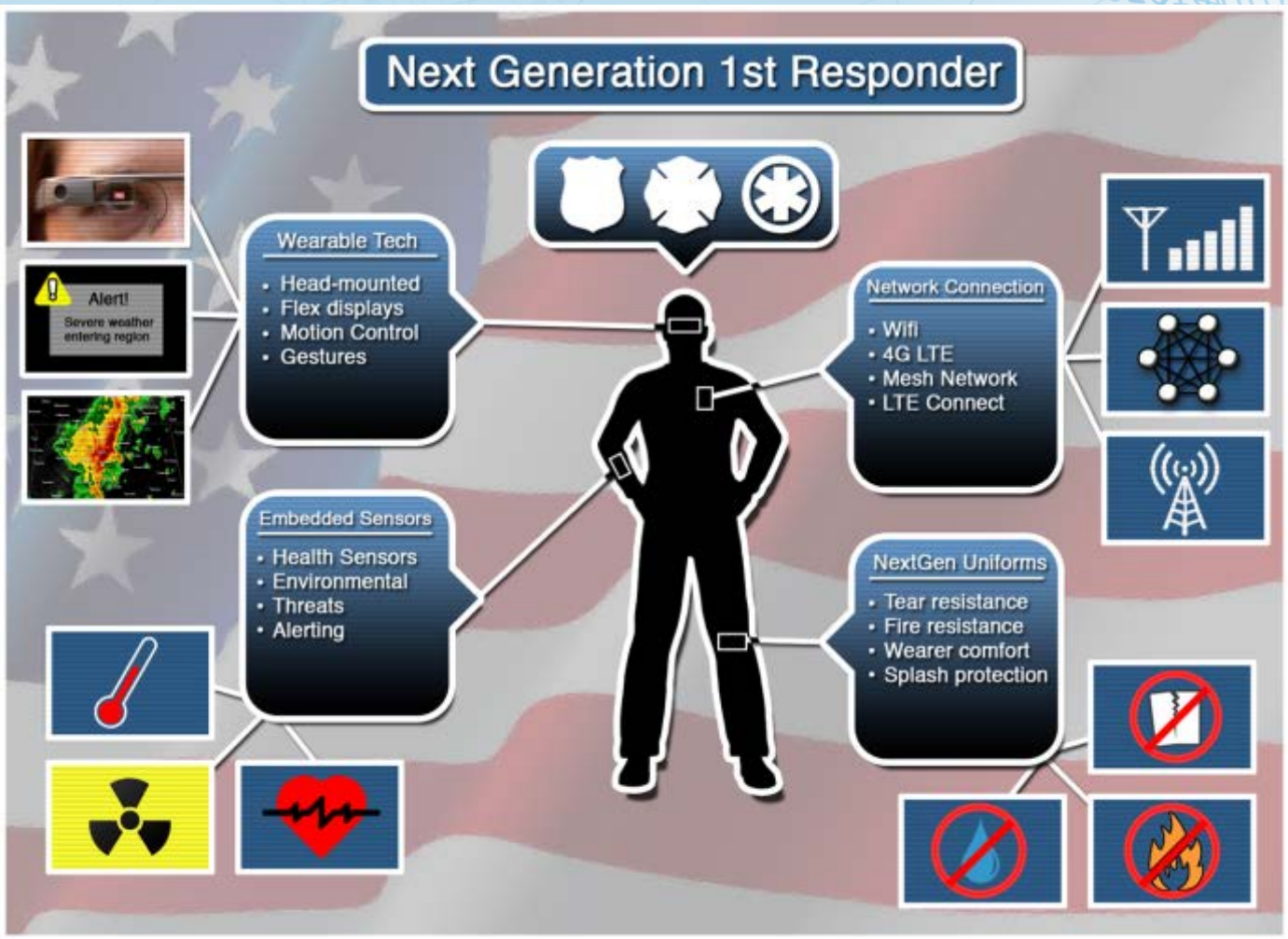
NGFR Approach Concepts

- Maximize personal protective equipment protection, enhance comfort and durability, apply human factors engineering principles
- Integrate plug-and-play concepts
- Provide up-to-the-moment situational awareness to first responders
- Focus on ruggedized and miniaturized form factors for hardware
- Accelerate and apply information sharing standards allowing responders to receive, retrieve and display diverse data types
- Emphasize modular designs, standards, standardization and interoperability for technologies
- Minimize components cost
- Develop and deliver an interoperable, standards-based architecture

NGFR Requirements Traceability

- First Responder Resource Group Project Responder 4 Priority Capabilities, with requirements also informed by stakeholders and resources, including:
  - SAFECOM Interoperability Continuum
  - National Public Safety Telecommunications Council - Public Safety Broadband Launch Recommendations
  - DHS S&T Next Generation Tactical Wireless Broadband Goals
  - Virtual Social Media Working Group Recommendations for Situational Awareness and Decision Support (2014)
  - Systems Engineering Development Institute, Big Data Recommendations Report
  - Canada / United States Experiment – After Action Report Findings and Recommendations 2013
  - Central United States Earthquake Consortium – CAPSTONE Exercise 2014 After Action Report Recommendations

NGFR Major Components



Homeland Security
Science and Technology

Return On Investment: Four Minutes

Information Sharing / Interoperability Ecosystem

- First responders on scene faster and better informed
  - Paramedic / EMT CPR starts four minutes sooner
  - Fire suppression starts four minutes sooner
  - An active shooter is stopped four minutes sooner
- How?
  - Cut time to dispatch first responder
  - Use next generation communications technology
    - Voice, data, machine-to-machine (M2M)
  - Implement information and data sharing standards
  - Improve situational awareness
    - Including video

Homeland Security

Science and Technology

CAD 2 CAD

Computer-Aided Dispatch Data Interoperability RDT&E

- Description
  - Conduct analysis and evaluation of information sharing landscape for CAD 2 CAD and CAD-to-RMS (Records Management System)
  - Identify solutions for achieving interoperability through application of data standards
  - Partner with the Association of Public-Safety Communications Officials (APCO) and the IJIS Institute to develop and document CAD-to-CAD and/or CAD-to-RMS information sharing exchanges for proof-of-concept field trials
  - Work with CAD vendors to manufacture products that incorporate data standards for systems interoperability

- Value
  - Increase regional situational awareness and enable CAD systems to share information (better decision making, more timely information, faster response)
  - Cooperating parties aware of resource movement / status for joint responses

Homeland Security
Science and Technology

Engage With Us

Homeland Security
Science and Technology

S&T
NATIONAL CONVERSATION
ON HOMELAND SECURITY TECHNOLOGY

JOIN THE CONVERSATION.
BE THE FUTURE OF R&D.

http://scitech.dhs.gov

START TALKING

TODAY!

Homeland Security
Science and Technology

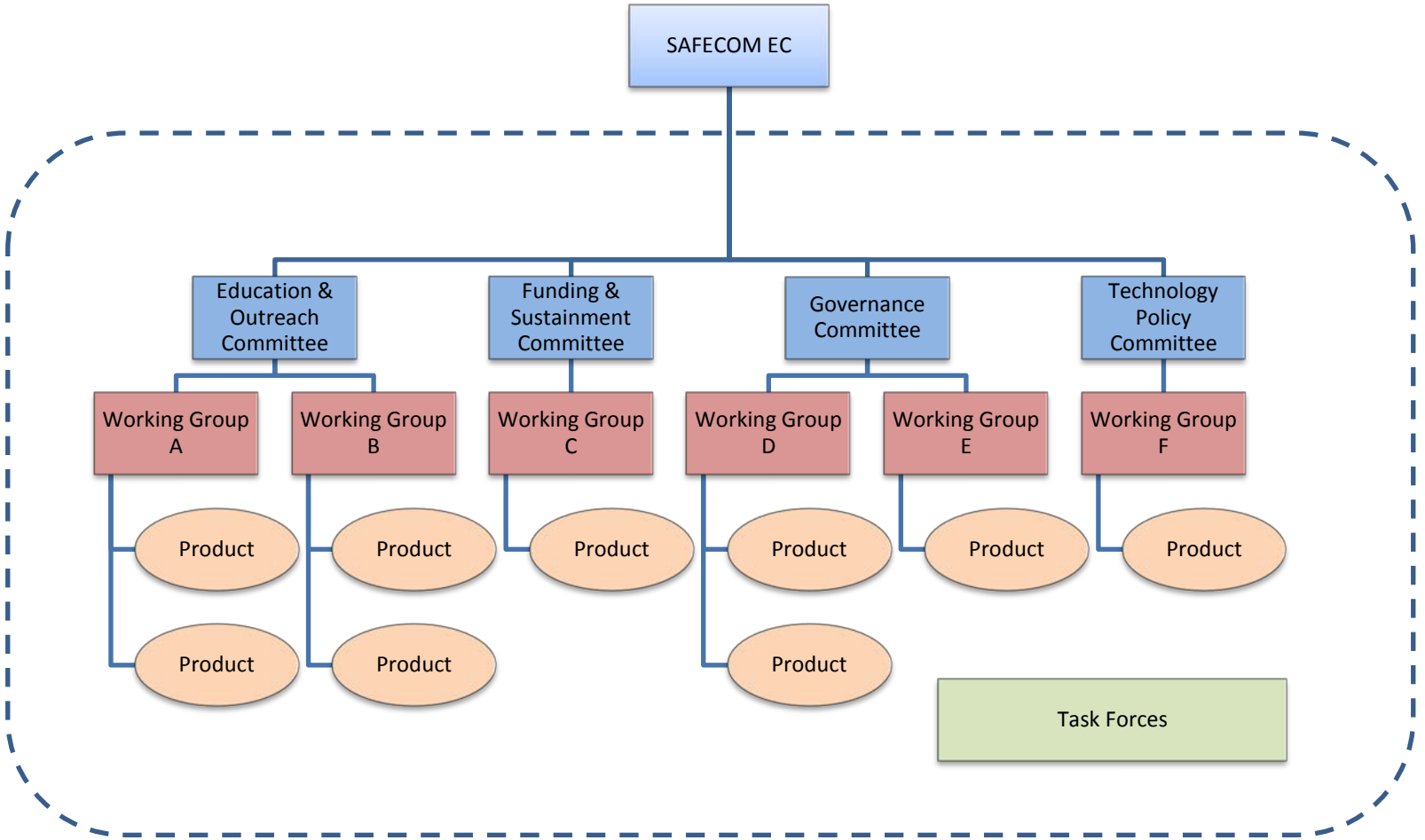
Homeland Security

Science and Technology

Federal Partners Update *(continued)*

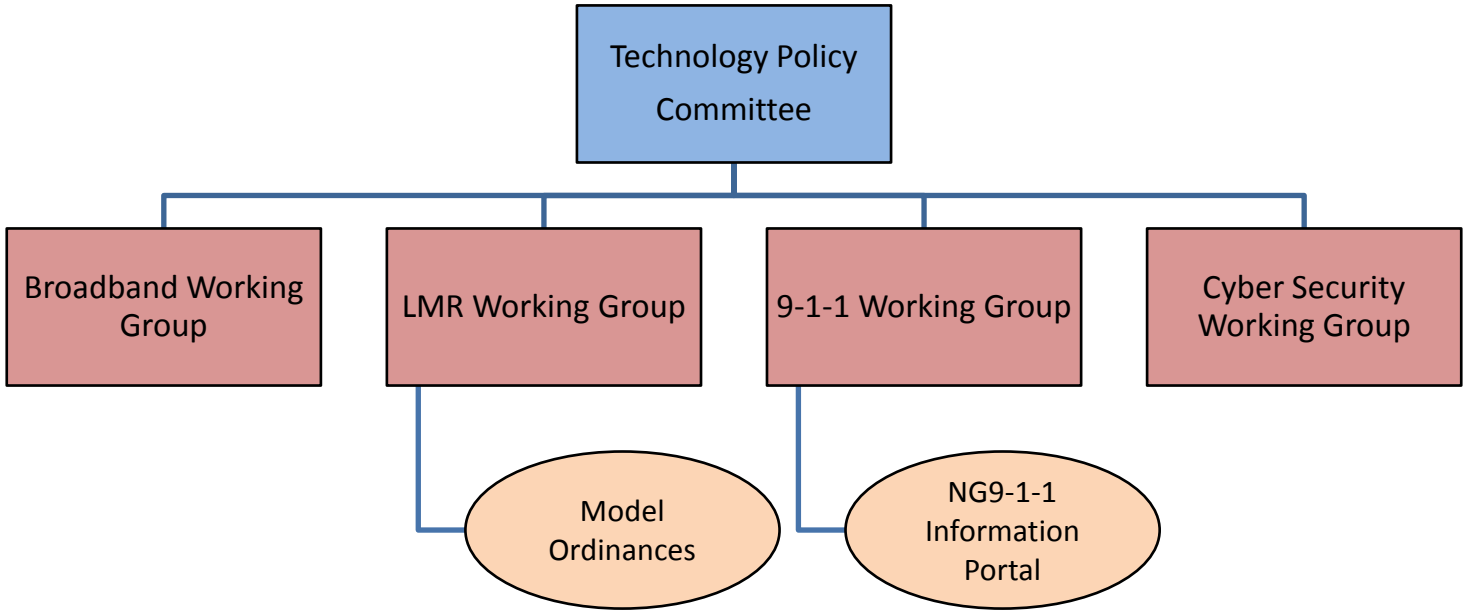
- Department of Homeland Security (DHS)
  - Chris Essid, Deputy Director, Office of Emergency Communications (OEC)

SAFECOM Structure



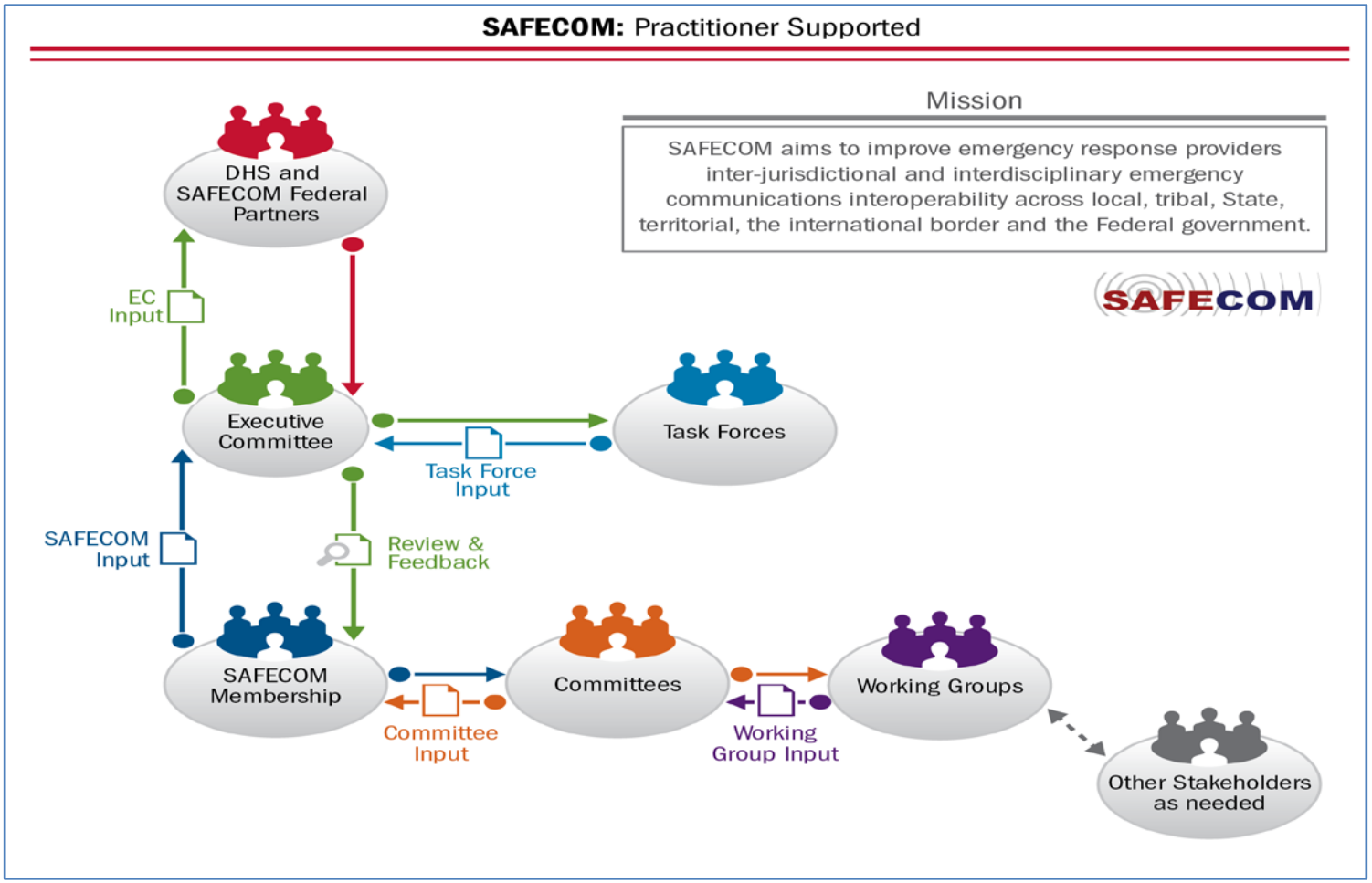
SAFECOM
Executive Committee

Sample SAFECOM Committee Structure



SAFECOM Executive Committee

SAFECOM Structure Update



SAFECOM
Executive Committee

Technology and Broadband Discussion

Tom Sorley, Chair | Andy Thiessen, Vice Chair

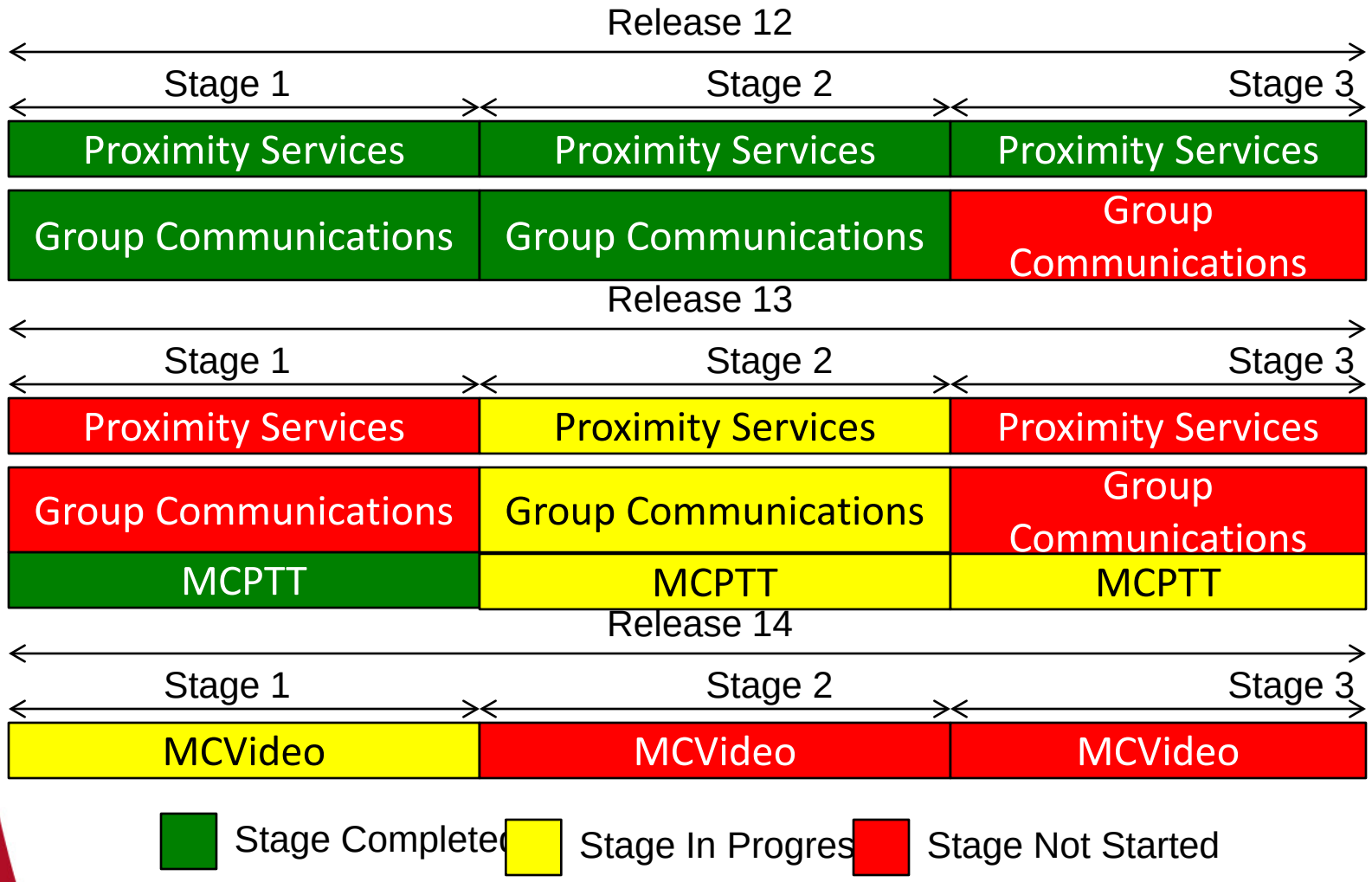
Submit Questions Online
Send email to support@npstc.org

NPSTC is a federation of organizations whose mission is to improve public safety communications and interoperability through collaborative leadership.

Technology and Broadband Discussion

- LTE Global Standards/3GPP Update – Andy Thiessen
- Public Safety Broadband Requirements – Andy Thiessen
  - Local Control WG Update
  - Priority and Quality of Service WG Update
  - Broadband Deployables WG Update

LTE Global Standards



Technology and Broadband Discussion

- FirstNet/NG9-1-1 – Barry Luke, NPSTC Deputy Executive Director

Topical Presentation

Topical Presentation

- Pacific DataVision, Inc. – Morgan O’Brien, Vice Chairman

Spectrum Management Discussion

David Buchanan, Chair | Stu Overby, Vice Chair

Submit Questions Online
Send email to support@npstc.org

Spectrum Management Discussion

- LED/High Efficiency Lighting Interference Report – David Buchanan
- 700 MHz Deployable Trunked Channels – David Buchanan
- FCC NPRM on 800 MHz Interstitial Channels – Stu Overby
- Summary of NPSTC Filings – Stu Overby

NPSTC Filings Summary

Date	Filing	Topic
2/23/15	Reply to Recon Request (FCC)	P25 CAP
2/20/15	Reply Comments (FCC)	Cellular PFD/Minimizing Interference
2/13/15	NPSTC/NRPC Letter (FCC)	700 MHz Deployable Channels
1/5/2015	Comments (FCC)	Public Safety Frequency Coordination
12/17/2014	Comments (FCC)	Part 22 Rules
10/27/2014	Comments (FirstNet)	FirstNet Public Safety User Definition
10/16/2014	Ex Parte Comments (FCC)	4.9 GHz National Plan Proposal
7/14/2014	Reply Comments (FCC)	Wireless 9-1-1 Location Accuracy
6/30/2014	Comments (FCC)	Part 90 Frequency Coordinators
5/16/2014	Petition for Rule Making (FCC)	Railroad Police Access to PS I/O Channels
5/12/2014	Comments (FCC)	Wireless 9-1-1 Location Accuracy
5/9/2014	Ex Parte Comments (FCC)	4.9 GHz National Plan Proposal
4/28/2014	Ex Parte Comments (FCC)	4.9 GHz National Plan Proposal

Anticipated NPSTC Filings

Date	Filing	Topic
4/13/2015	Comments (FirstNet)	FirstNet Second Public Notice
4/17/2015	Reply Comments (FCC)	700 MHz Deployable Channels
TBD	Comments (FCC)	800 MHz Interstitials
TBD	Letter (FCC)	LED Lighting Interference

Spectrum Management Discussion

- Request for Governing Board Approval – David Buchanan
  - Create New Interference Protection Working Group
  - Retire Current Narrowbanding Working Group

NPSTC Organization Updates

CITIG

CANADIAN INTEROPERABILITY TECHNOLOGY INTEREST GROUP
GROUPE D'INTÉRÊT CANADIEN EN TECHNOLOGIE DE L'INTEROPÉRABILITÉ

CITIG and Public Safety Interoperability in Canada: A Status Report at the Full NPSTC Meeting

Proudly governed by:

Paramedic Chiefs of Canada
Chefs Paramédics du Canada

Friday, March 20, 2015

CITIG

About CITIG

- Partnership between the Canadian Associations of Chiefs of Police, Fire and Paramedics since 2007.
- Funded by Government of Canada, part of DRDC's Centre for Security Science, for first four years as a Program
- "Spun out" in January 2012, as a Federally Incorporated Not-for-Profit Corporation
- Over 1,900 "Associates" and growing!
- Work with wide range of national & international partners from all levels of government, responders, academia, utilities & industry
- Financially successful in first two years!

CITIG – Our Mission

To improve Canadian public safety interoperability at home and abroad through collaborative efforts, innovation and leadership

CITIG's Board

Assistant Deputy Chief Michael Sullivan, Ret. Ottawa Fire Services, CITIG Chair

Chief Jeff Brooks, Manager, Emergency Medical Services Department, County of Lambton, CITIG Vice Chair

Inspector Brendan Dodd, Windsor Police Service, CITIG Secretary

Association Advisors

John-Paul Cody-Cox, Executive Director, CAFC

Kelly Nash, Executive Director, Paramedic Chiefs of Canada

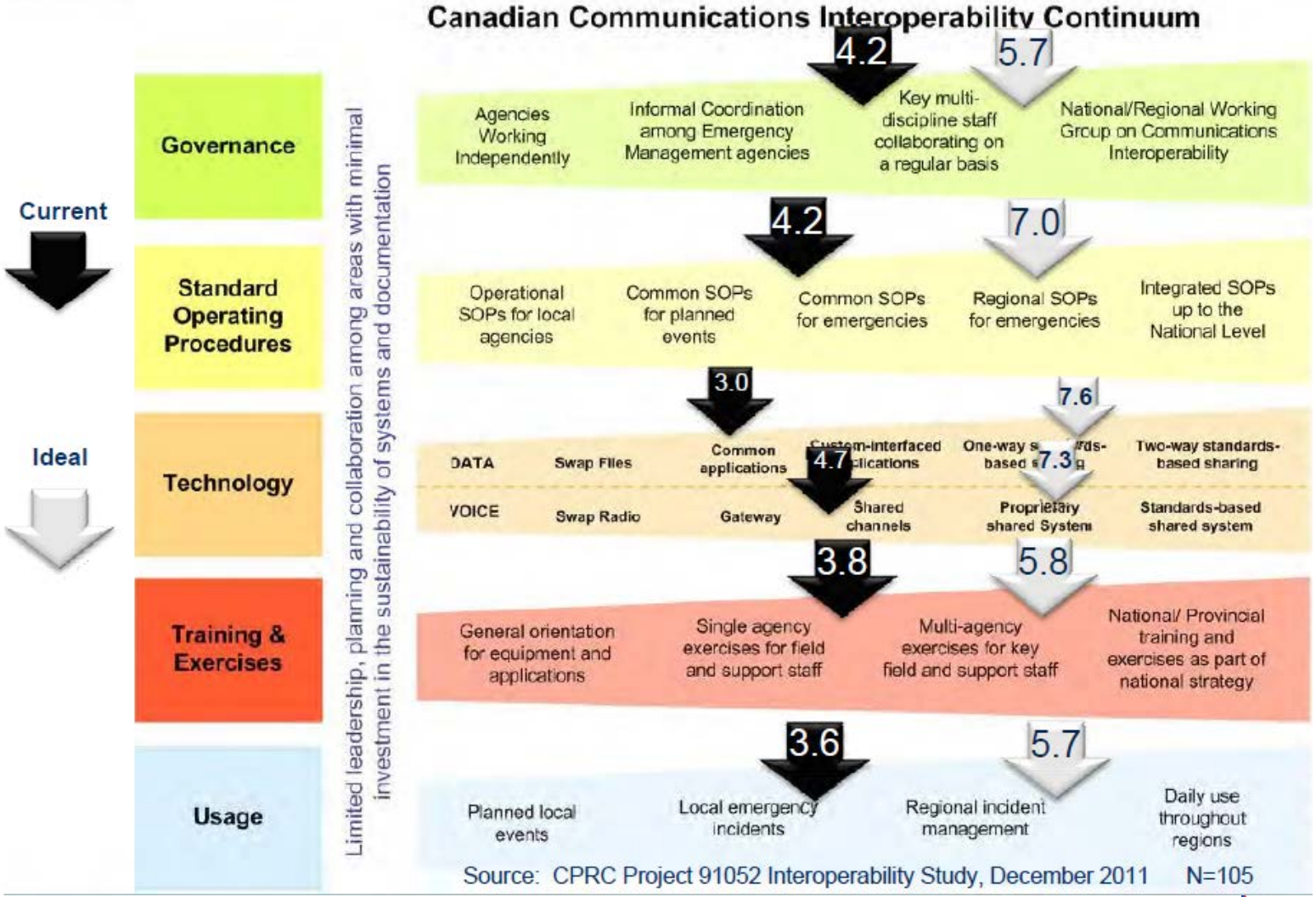
Mike Webb, E-Comm 9-1-1 and CACP ICT Committee

CITIG in Numbers (as of February 27, 2015)

- **3** years of operation as a NFP by Associations
- **141,011** page views of www.citig.ca since March 2010
- **53,288** recipients of CITIG eNews Messages
- **5604** in person participants at the series of forums and workshops held across Canada
- **1912** members registered on www.citig.ca
- **8** annual workshops , **6** annual Vendor Outreach Forums , **27** Regional Forums and **4** Canada-US Cross Border Interoperable Communications Workshops
- Works in partnership with **3** chiefs associations and many other stakeholders

1 goal: Improve public safety interoperability in Canada!

Interoperability Levels with Responders



CITIG Priorities for 2015-16

- **700 MHz Broadband for Mission Critical Public Safety DATA**
  - Key enabler for responders data interoperability
  - Where is the other 10 MHz of Spectrum?
  - Encouraging action with the PSBBN
  - Will not be structured like FirstNet
  - Canada leading the way on deployables
  - Meeting with Minister Blaney
  - See www.action700.ca

CITIG Priorities for 2015-16

- **Next Generation (NG) 9-1-1**
  - Fundamental change in how agencies get calls
  - Working with key stakeholders on call for coordinated approach based on standards
  - Still working to ensure that NG9-1-1 can be coordinated at the national level
  - F/P/T not keen on having NG9-1-1 added as a new Action Plan under the Communications Interoperability Strategy for Canada
  - Status Report on www.citig.ca and see www.ng911.ca

CITIG Priorities for 2015-16

- **Cross-border interoperability**
  - Successful program in 2013 and 2014 thanks to two $100K grants
  - 2013 featured 6 Regional Forums
  - 2014 culminated in ***CITIG Canada-US Bi-National Cross Border Interoperability Workshop*** and White Paper in conjunction with NPSTC
  - Workshop summary and action plans released
  - White Paper with NPSTC now out!

CITIG Priorities for 2015-16

- **Location-Based Services**
  - Perhaps area where will see biggest growth
  - Emerging area tied to trends in consumer services, alerting, tracking, NG9-1-1 and the CPSBBN
  - Overwhelming amount of information a major concern
  - Need coordinated standards-based approach
  - Will form significant part of our future workshop programs

Upcoming Events

CITIG Kincardine and Saugeen Shores Regional Forum
April 21 and 22 in Port Elgin, ON

CITIG's Ninth **Canadian Public Safety Interoperability Workshop**, Nov. 29 to Dec. 2 in TBA

See www.citig.ca for more information

CITIG

Thank You!

Eric Torunski

Executive Director

Canadian Interoperability Technology Interest Group (CITIG)

Ottawa, Ontario, Canada

eric.torunski@citig.ca

Tel: 613.730.5544 / Fax: 613.730.5545

www.citig.ca

Follow us on Twitter @CITIG_Canada

NPSTC Organization Updates

- Utilities Telecom Council (UTC) – Brett Kilbourne, Associate Representative

ATIS Update to NPSTC

Frank Korinek
ATIS Board Member
Motorola Solutions

March 20, 2015

About ATIS

Founded in 1984, ATIS develops solutions that include:

- Standards;
- Requirements;
- Implementation Guidelines;
- Specifications;
- Feasibility Studies;
- Business use cases;
- Software toolkits; and
- Interoperability testing.

Founding Partner of 3GPP and oneM2M.

Broad membership comprised of service providers, manufacturers, public safety (APCO Intl, NENA, Tarrant County 9-1-1, etc.), government agencies (US Dept of Commerce, US DHS OEC, US Dept of Justice, Public Safety Canada), software companies, etc.

ATIS and Third Generation Partnership Project (3GPP)

ATIS is the North American Partner to 3GPP, where LTE-Advanced specifications are developed.

- Responsible for transposing 3GPP specifications into formal North American deliverables (i.e., ATIS deliverables).
- Public safety has been a very active topic over the past few years, with new 3GPP “Mission-Critical Applications” group has recently created (SA6).
- “5G” Study Item recently approved in 3GPP.
- Many ATIS **WTSC** and **PTSC** members are active in 3GPP.
  - ATIS provides a venue to discuss and develop 3GPP Change Requests.

New/Updated Activities (since November 2014 NPSTC meeting)

Text to 9-1-1

Building upon the current SMS to 9-1-1 standard, completing text-based MMS to 9-1-1 standard in early 2Q2015.

- Provide Commercial Mobile Service Providers (CMSPs) and Text Control Center (TCC) providers with a set of implementation guidelines for the Joint ATIS/TIA Native SMS/MMS Text to 9-1-1 Requirements and Architecture Specification Release 2 (J-STD-110)
- Support for images, video, etc., anticipated to be included in future 3GPP-based MMES efforts.

Emergency Location (ELOC) Task Force

ATIS ELOC TF developing needed solutions in support of November 2014 AT&T, Verizon Wireless, T-Mobile, Sprint, APCO, and NENA voluntary agreement and roadmap.

- Proactive support of FCC initiatives to evaluate location accuracy technologies.
- Advance the improvement of North American emergency location capabilities and services.
- Focus initially on the standards needed to support the commitments defined in roadmap.
- Collaborate and liaise with other organizations to seek broader implementation and adoption of solutions, including with 3GPP to progress global solutions.

Location Accuracy

ATIS efforts support current and anticipated FCC initiatives. Highlights include:

- FCC references to ATIS ESIF activities in R&O.
  - Methodologies and six testing environments (supporting live 9-1-1 call data).
- New work item developing methodologies in support of vertical location (z-axis).

Commercial Mobile Alert System (CMAS)

ATIS developed CMAS (wireless emergency alert (WEA)) solutions per the Warning, Alert and Response Network (WARN) Act and FCC.

- Effort included participation from FEMA and DHS and provides capability for devices to receive Presidential, AMBER, and life/property threat alerts.

Current efforts include:

- Feasibility studies addressing:
  - Display of additional content (map, image, hazard symbols)
  - Geo-targeting (handset vs. county targeting)
- Support for Spanish language
- Canadian CMAS and mobile device behavior

Next Generation Emergency Services (NG911)

ATIS **WTSC/ESIF** expanded existing solution (ATIS-0700015) that defined the North American emergency call handling procedures in an IMS-based origination network and routing of such calls to a terminating ESInet/Legacy Selective Router, *to support Multimedia Emergency Services (MMES)*.

- Allow for full multimedia experience encompassing simultaneous text, voice, pictures, and video.
- Target completion 2Q2015.

Mobile Device Theft Prevention (MDTP)

ATIS efforts in support of FCC Technological Advisory Council (TAC) recommendations. Highlights include:

- ATIS, working with GSMA NA, is developing standards, methods and procedures to obtain device identifiers from smartphones including those that are locked or rendered inoperable.

5G

ATIS evaluating technology impacts of 5G (implementation anticipated ~2020 or later) on North American market, which will potentially include public safety impacts.

- Hosting ATIS 5G Workshop from June 8-9 in Chicago
- 3GPP “5G” Study Item approved
- ATIS will collaborate and liaise with appropriate organizations

Contact

For additional information or to get engaged in ATIS activities, contact ATIS' NPSTC representatives:

Frank Korinek, Motorola Solutions
Director, Strategy & Standards
Frank.Korinek@motorolasolutions.com

Brian Daly, AT&T
Director, Core Network & Government/Regulatory Standards
brian.k.daly@att.com

Steve Barclay, ATIS
Director, Global Standards Development
sbarclay@atis.org
+1 202-434-8832

Previously Reported Activities

Next Generation Emergency Services (NG911)

In 2013, ATIS **ESIF** developed a standard providing the initial view (Stage 1) of applying Common IMS to NG911 networks (ATIS-0500023).

Current work expands upon this standard and is defining the architecture, functional elements, call flows and interfaces (Stage 2 and 3) derived from the Stage 1 Requirements.

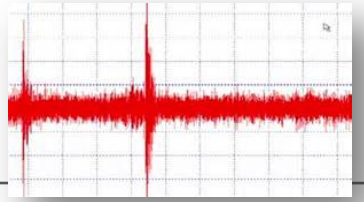
- Definition of specific functional elements that are functionally equivalent to the existing NENA i3 architecture with compatible interfaces to support the delivery of emergency calls to legacy and NG9-1-1/i3 PSAPs.

LMR-LTE Interconnection

ATIS **WTSC** is leading a joint effort to develop solutions necessary for the interconnection of Land Mobile Radio (LMR) and LTE networks.

- This effort supports NIST in its objective to “accelerate the development of the capability for communications between currently deployed public safety narrowband systems and the nationwide public safety broadband network.”
- Provide a Public Safety Mission Critical PTT voice service between subscriber units operating on P25 LMR systems and conventional mutual channels, and subscriber units operating on Public Safety LTE network systems.
- Currently on-hold pending 3GPP Release 13 activities.

Earthquake Early Warning System (EEWS)



ATIS **WTSC** recently initiated a project to evaluate the feasibility of a proposed California EEWS using commercial wireless services to:

- Understand how cellular networks may integrate into the EEWS proposal.
- Perform a feasibility study of “quick reliable mass notification” of EEWSs given current standards and technologies.
- Study how EEWSs deployed in other countries are defined in standards and whether those solutions and standards might apply to the proposed system.

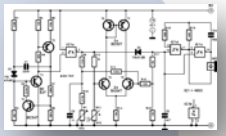
Public Safety Related Applications Task Force

In April, ATIS formed the IP Transition of Public Safety Related Applications Task Force (PSRA TF)

- Since many key public safety applications are still based upon legacy PSTN technologies and services, the TF is examining the effects of the All-IP migration on infrastructure associated with public safety.

The TF identified relevant stakeholder organizations related to the following applications:

- Alarm circuits to local fire and police departments
- FAA circuits to towers and alarms
- Circuits that monitor railroad crossings
- Circuits for sensors at gas and power company locations
- Meter and alarming circuits related to power grid
- Circuits supporting underground communications



PSRA TF - Status

Outreach to industry associations is in progress and significant detail is being collected.

- NPSTC (Paul Patrick) is participating.

The TF will use this industry input to:

- Determine if prioritization of key applications is needed.
- Identify if there are common issues impacting All-IP transition across industries.
- Evaluate existing and potential solutions towards the publication of guidelines.
- Identify opportunities for customer education regarding the All-IP transition.

Target completion of the TF Report containing all relevant findings, conclusions and recommendations in 1Q2015.

Over the Top (OTT) Citizen to Authority

ATIS **WTSC** is developing a solution that will identify the technical methods by which an operator of a user access network can acquire and convey location for Non-Operator-Managed OTT citizen-to-authority emergency services.

- The following will be addressed:
  - Use case scenarios (including signaling flows) for location acquisition and conveyance.
  - Identification of protocols that could potentially be used on user-to-network and network-to-network interfaces to accomplish the goal of location acquisition and conveyance.
  - Consideration of overall end-to-end session support to verify suitable operation of location acquisition and conveyance (e.g., to support PSAP emergency location update requests through the OTT application provider and assist routing to the PSAP).

Supplemental Material

ATIS TOPS Council

ATIS' Technology and Operations (TOPS) Council is a committee of the ATIS Board of Directors that identifies the industry's most pressing technical and operational challenges and coordinates industry-wide solutions that address ICT organizations' top business priorities. For 2015:

- Content Delivery via Virtualized Networks
- Convergence for Lawful Intercept
- Integration Platform as a Service (iPaaS)
- Public Safety Related Applications (PSRA)
- Reference Functional Model
- Testbeds

Participation is open to interested ATIS members.

Organizations Participating in ATIS PSRA TF Activity

- American Gas Association (AGA)
- Alarm Industry Communications Committee (AICC)
- Association of Public-Safety Communications Officials (APCO) International
- Electronic Security Association (ESA)
- National Association of State Fire Marshals (NASFM)
- National Public Safety Telecommunications Council (NPSTC)
- National Emergency Number Association (NENA)
- National Fire Protection Association (NFPA)
- National Rural Electric Cooperative Association (NRECA)
- Security Industry Association (SIA)
- Utilities Telecom Council (UTC)

Text to 9-1-1

In 2013, ATIS published an interim text to 9-1-1 solution (J-STD-110) that allows any end user device with SMS capabilities to launch a text message communication with the relevant PSAP.

- Provides a multi-carrier, multi-vendor, multi-PSAP nationwide solution with a vendor-neutral common architecture.
- Work continues for Multimedia Emergency Services (MMES).

ATIS also published Implementation Guidelines in support of J-STD-110 for Commercial Mobile Radio Service (CMRS) and Text Control Center (TCC) providers (J-STD-110.01).

- Identifies field tests to verify compliance with J-STD-110, as well as forms to be completed by providers.

Next Generation Emergency Services (NG911)

ATIS **WTSC** updated the standard that defines the North American emergency call handling procedures in an IMS-based origination network (including steps taken by the originating device) and routing of such calls to a terminating ESInet or to a legacy Selective Router (ATIS-0700015).

Work initiated to expand upon ATIS-0700015 to support Multimedia Emergency Services (MMES) for a full multimedia experience encompassing simultaneous text, voice, pictures, and video.

Network Functions Virtualization (NFV)

ATIS launched its NFV Forum in September 2014 to:

- Facilitate cross-provider service interconnection, interoperability, and interworking solutions.
- Define and prioritize use cases where SDN/NFV capabilities are required to generate new value and address immediate challenges.
- Integrate web scale and enterprise applications through programmable network APIs.
- Incorporate service creation tools such as service chaining for construction of business applications.
- Provide coordinated ATIS member contributions to open source activities to further industry objectives.

NFV Forum - Objectives

- Define priority use cases such as “virtual network operator” that emphasize the benefits of NFV in a multi-provider environment.
- Establish a common catalog of service descriptions that can be instantiated between service providers: runtime, network, and supporting functions.
- Specify the service advertising and discovery mechanisms that allow companies to find and incorporate these services.
- Incorporate service creation tools such as service chaining for construction of new, aggregate business applications and models.

Lawful Intercept (LI) / Lawfully Authorized Electronic Surveillance (LAES)

PTSC and **WTSC** develop wireline, wireless, and broadband LI standards, which allow service providers to meet regulatory LI and Communications Assistance for Law Enforcement Act (CALEA) requirements. Deliverables include:

- ATIS-0700016 - specifies the capabilities for reporting 3GPP IMS-based Push to Talk over Cellular (PoC) for LAES to a law enforcement agency (LEA).
- ATIS-0700005 - defines an interface between a Telecommunications Service Provider (TSP) and an LEA for reporting of LAES for 3GPP IMS-based VoIP and other multimedia services.
- ATIS-1000678 - defines the interfaces between a TSP and an LEA to assist the LEA in conducting LAES for Voice over Packet technologies in wireline networks.

ATIS Committees and Forums

Automatic Identification and Data Capture Committee (**AIDC**)	Cloud Services Forum (**CSF**)	Copper/Optical Access Synchronization and Transport Committee (**COAST**)	Emergency Services Interconnection Forum (**ESIF**)
IMSI Oversight Council (**IOC**)	Industry Numbering Committee (**INC**)	Network Functions Virtualization Forum (**NFV**)	Network Reliability Steering Committee (**NRSC**)
Next Generation Interconnection Interoperability Forum (**NGIIF**)	Ordering and Billing Forum (**OBF**)	Packet Technologies and Systems Committee (**PTSC**)	SMS/800 Number Administration Committee (**SNAC**)
Sustainability in Telecom: Energy and Protection Committee (**STEP**)	Telecom Management and Operations Committee (**TMOC**)	Wireless Technologies and Systems Committee (**WTSC**)	

FirstNet NPSBN Development

Harlin R. McEwen

Chief of Police (Ret) - City of Ithaca, NY
FBI Deputy Assistant Director (Ret) - Washington, DC
chiefhrm@pubsaf.com 607-227-1664

Chairman, Communications & Technology Committee
Life Member and Honorary President
International Association of Chiefs of Police (IACP)

Life Member and Communications Advisor
National Sheriffs' Association (NSA)

Life Member & Member Broadband Committee
APCO International

Chairman, Public Safety Advisory Committee (PSAC)
First Responder Network Authority (FirstNet)

Public Safety Advisory Committee (PSAC)

- Current Assignments
- Priority and Preemption Task Team (Kicked Off 2/26)
  - FirstNet is seeking advice from PSAC regarding an initial framework for implementing access prioritization, user preemption, and prioritized application use in the NPSBN
- Public Safety Grade Task Team (Kicked Off 2/27)
  - FirstNet is seeking advice from PSAC regarding an initial methodology and framework for prioritizing and implementing NPSTC's public safety grade recommendations in the NPSBN
- User Equipment Tasking (Kicked Off 3/4)
  - FirstNet is seeking advice from PSAC on functional objectives for and ergonomic considerations of Band 14 broadband user equipment that will meet the operational needs of first responders

FirstNet Update

Kevin McGinnis

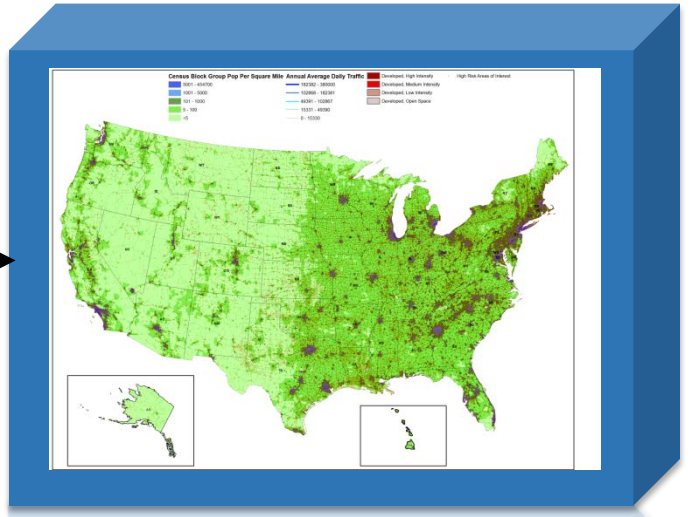
FirstNet Board Member

March 20, 2015

FirstNet's Focus

Consultation

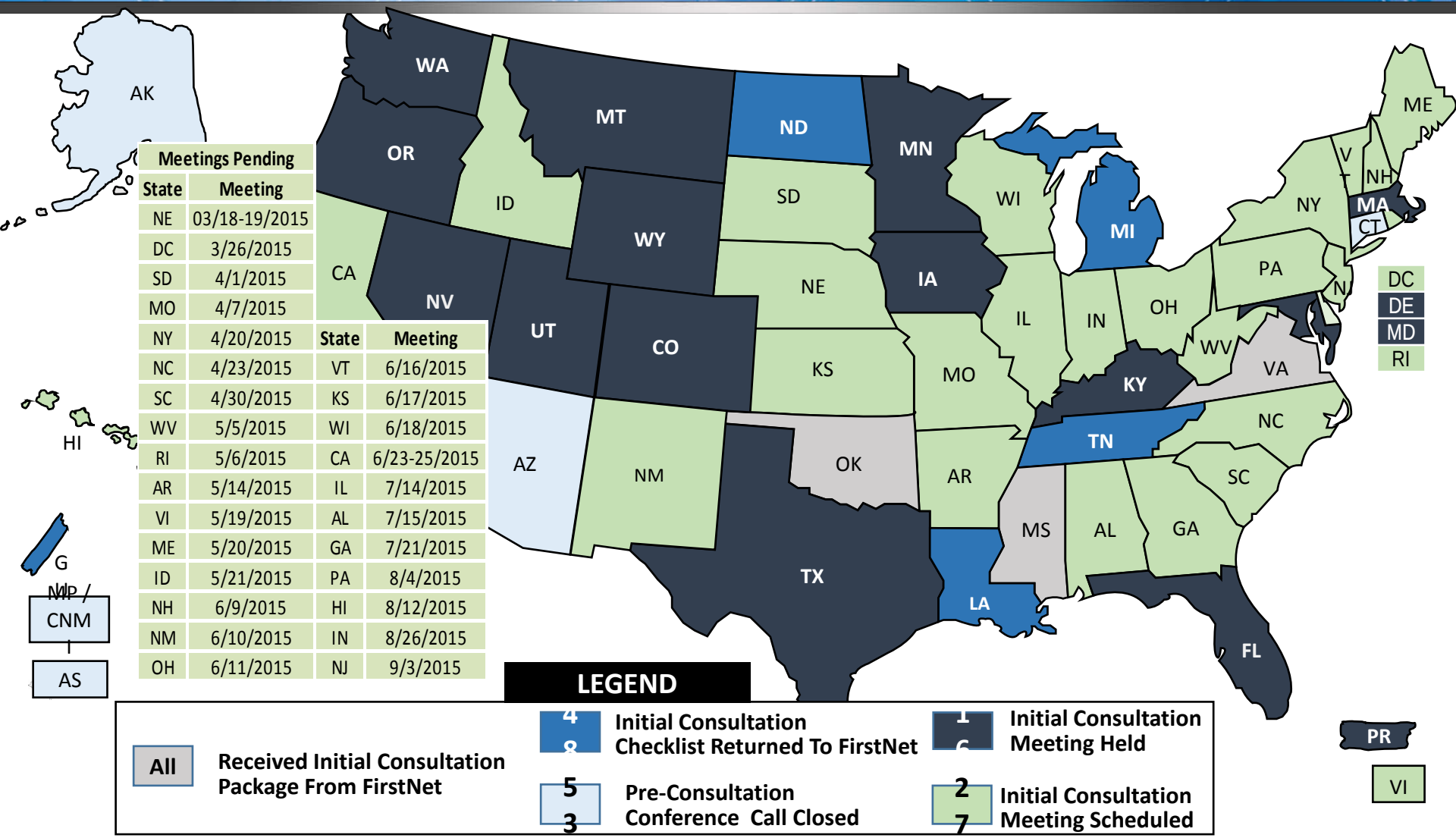
Acquisition/Draft RFP



Support

Tracker – State Consultation Activities

As of 13 March 2015



Meetings Pending	
State	Meeting
NE	03/18-19/2015
DC	3/26/2015
SD	4/1/2015
MO	4/7/2015
NY	4/20/2015
NC	4/23/2015
SC	4/30/2015
WV	5/5/2015
RI	5/6/2015
AR	5/14/2015
VI	5/19/2015
ME	5/20/2015
ID	5/21/2015
NH	6/9/2015
NM	6/10/2015
OH	6/11/2015

State	Meeting
VT	6/16/2015
KS	6/17/2015
WI	6/18/2015
CA	6/23-25/2015
IL	7/14/2015
AL	7/15/2015
GA	7/21/2015
PA	8/4/2015
HI	8/12/2015
IN	8/26/2015
NJ	9/3/2015

LEGEND

- **All** — Received Initial Consultation Package From FirstNet
- **4 8** — Initial Consultation Checklist Returned To FirstNet
- **5 3** — Pre-Consultation Conference Call Closed
- **1 6** — Initial Consultation Meeting Held
- **2 7** — Initial Consultation Meeting Scheduled

Initial Consultation Goals

Strengthen Our Relationship

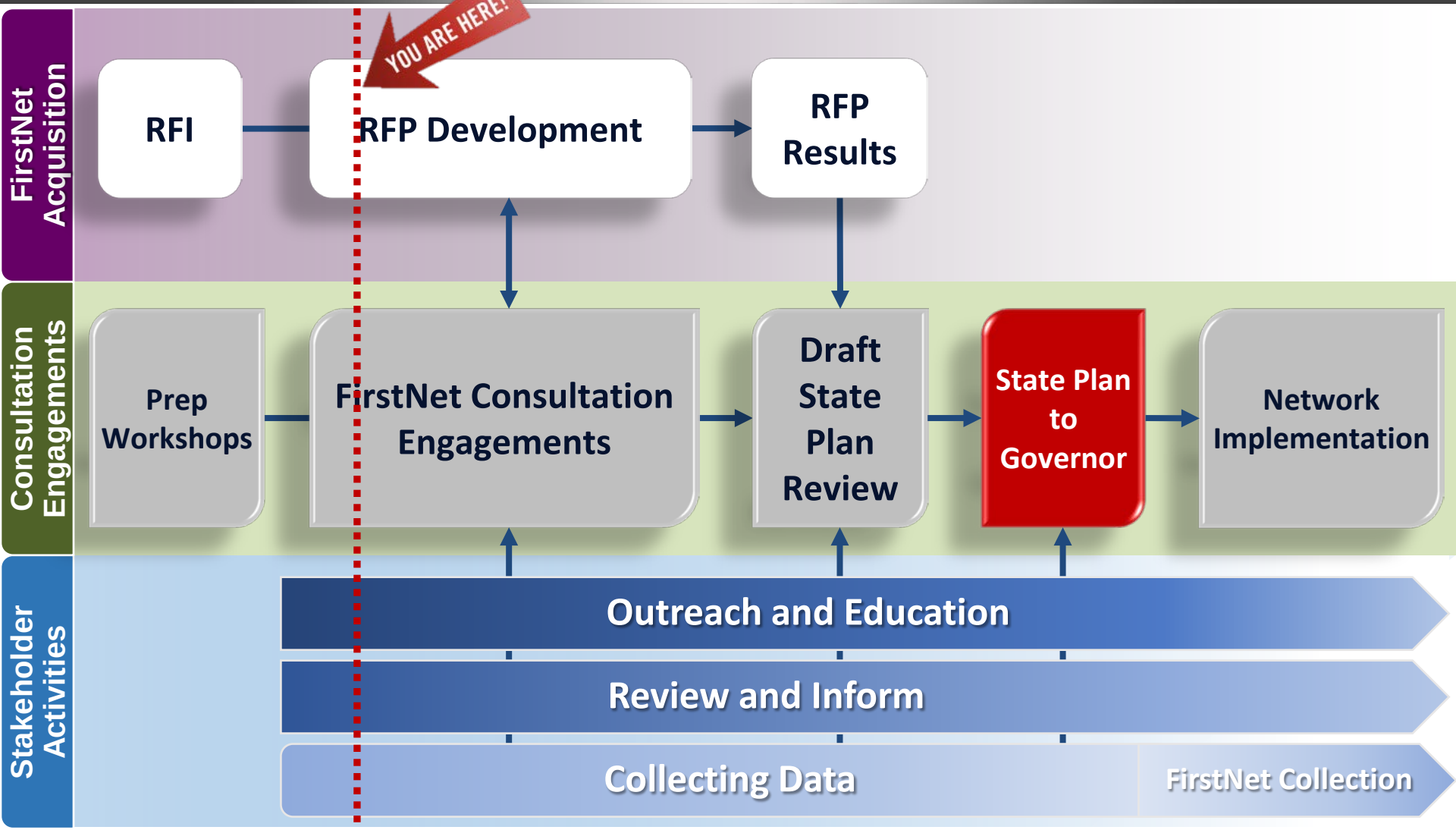
Provide FirstNet Updates

Learn about State/Territory's Unique Needs

Discuss Next Steps

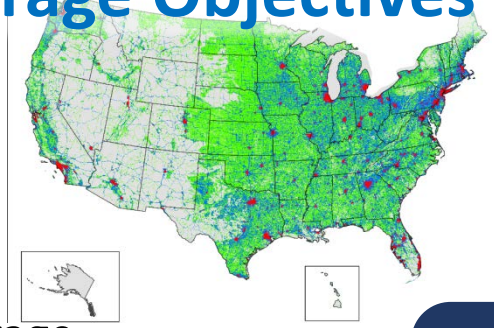
Meeting Goals

State Plan Development Process



Data Collection Categories

Coverage Objectives



- Coverage
- Phased Build Out

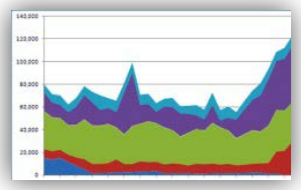
Users and Operations

- Public Safety Entity Info
- Devices
- Operational Areas

State / Territory

Capacity

- Applications
- Data Usage



Current Providers

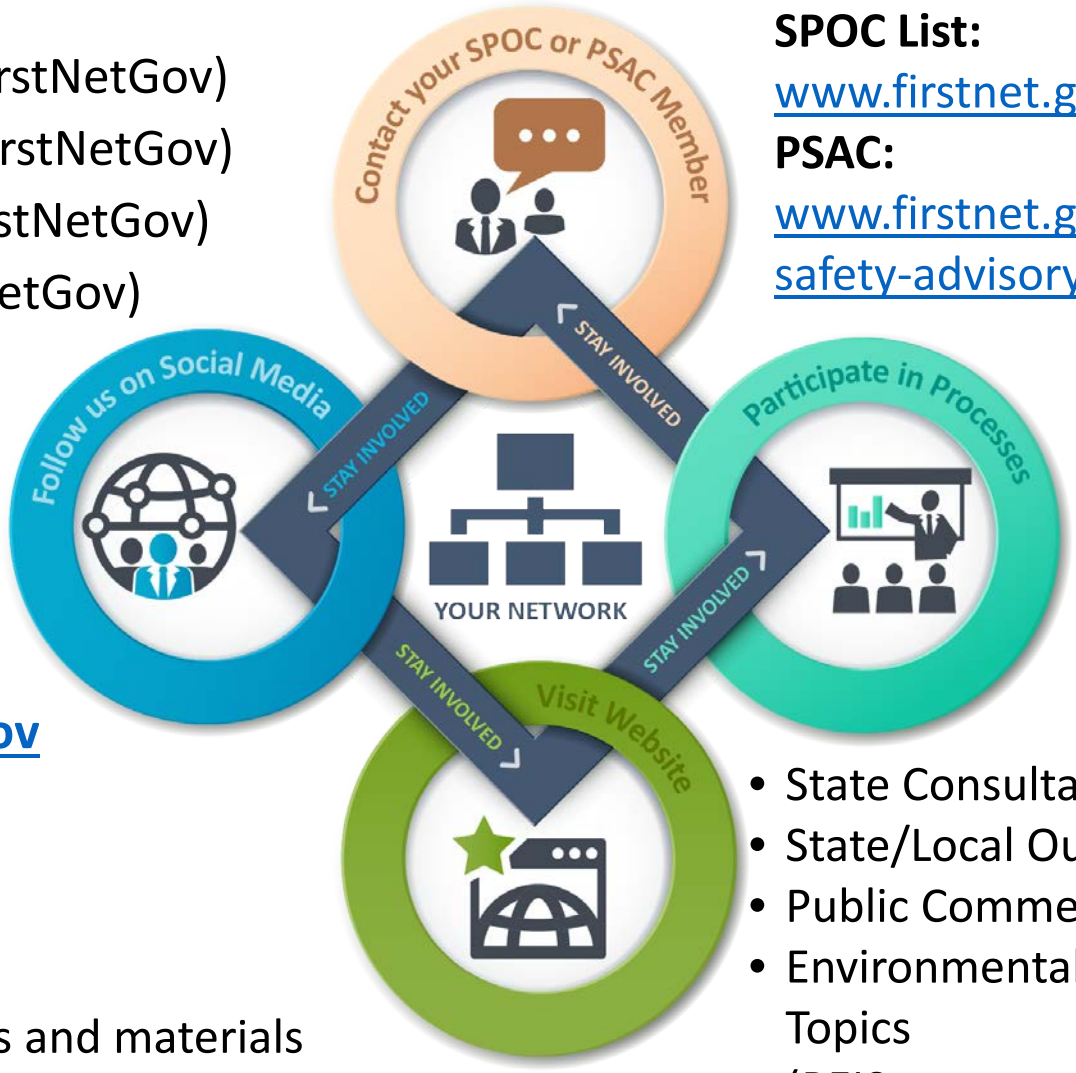
- Current Providers
- Procurement Vehicles
- Service Plans

Second Public Notice

- FirstNet initiated its second public notice and comment process seeking comments on certain legislative interpretations under the Act relating to key topics including:
  - Technical Requirements for Equipment Use on the Network
  - Network Policies
  - State Plan Implementation and Decision Process
  - Customer, Operational, and Funding Considerations Regarding State Assumption of Responsibility to Build and Operate a RAN
- Date of Release: March 13, 2015
- Comment Deadline: April 13, 2015
- The public, including any individual or organization, is invited to submit written comments to the notice either electronically through www.regulations.gov or by mail to the address listed in the notice

Stay in Touch with FirstNet

- Twitter (@FirstNetGov)
- Google+ (+FirstNetGov)
- YouTube (FirstNetGov)
- Flickr (FirstNetGov)
- LinkedIn



SPOC List:
www.firstnet.gov/consultation
PSAC:
www.firstnet.gov/about/public-safety-advisory-committee

www.firstnet.gov

- Fact Sheets
- Blogs
- Presentations
- Current Events
- Board meetings and materials

- State Consultation
- State/Local Outreach Activities
- Public Comment
- Environmental & Historic/Cultural Topics (PEISComments@firstnet.gov)

Thank You

Federal Partners Update *(continued)*

Federal Partners Update *(continued)*

- Federal Communications Commission (FCC) – Roberto Mussenden, Attorney-Advisor, Policy and Licensing Division, Public Safety Homeland Security Bureau (PSHSB)

Interoperability Discussion

John Lenihan, Chair | Don Root, Vice Chair

Submit Questions Online
Send email to support@npstc.org

NPSTC is a federation of organizations whose mission is to improve public safety communications and interoperability through collaborative leadership.

Interoperability Discussion

- Emergency Medical Services – Paul Patrick, Chair
- Common Channel Naming – Don Root, Chair

Common Channel Naming Working Group

- Current Activities
  - 700 MHz Air-Ground channels named (7AG58, etc.)
  - Revise APCO/NPSTC ANS 1-104-1-2010

Table 1: Sorted by band in Numeric Order*

FREQ / FCC CHANNEL (SUBSCRIBER LOAD) RECEIVE	TRANSMIT	BASE/MOBILE OR FIXED (REPEATER OR CONTROL)	ELIGIBILITY / PRIMARY USE	Original NCC Name	COMMON NAME	LIMITATIONS (47 CFR Part 90)
MHz	MHz		FCC 30 MHz Public Safety Band			
39.4800	45.6800	Fixed-Mobile	Law Enforcement	3LAW1	LLAW1	90.20(c)(3) [15]
	SIMPLEX	Base-Fixed-Mobile	Law Enforcement	3LAW1D	LLAW1D	90.20(c)(3) [15]
39.4800	45.6800	Fixed-Mobile	Fire - Proposed	3FIR2	LFIRE2	Prop. 90.20(c)(3) [19]
	SIMPLEX	Base-Fixed-Mobile	Fire - Proposed	3FIR2D	LFIRE2D	Prop. 90.20(c)(3) [19]
45.8600	39.4000	Fixed-Mobile	Law Enforcement	3LAW3	LLAW3	90.20(c)(3) [15]
	SIMPLEX	Base-Fixed-Mobile	Law Enforcement	3LAW3	LLAW3D	90.20(c)(3) [15]
45.8800	39.4800	Fixed-Mobile	Fire - Proposed	3FIR4	LFIRE4	Prop. 90.20(c)(3) [19]
	SIMPLEX	Base-Fixed-Mobile	Fire	3FIR4	LFIRE4D	90.20(c)(3) [19]
MHz	MHz		FCC 150 - 162 MHz Public Safety Band			
158.7525	SIMPLEX	Base-Fixed-Mobile	Any Public Safety Eligible	1CALL18	VCALL10	90.20(c)(3) [80,83]
151.1375	SIMPLEX	Base-Fixed-Mobile	Any Public Safety Eligible	1TAC5	VTAC11	90.20(c)(3) [80]
154.4525	SIMPLEX	Base-Fixed-Mobile	Any Public Safety Eligible	1TAC12	VTAC12	90.20(c)(3) [80]
158.7375	SIMPLEX	Base-Fixed-Mobile	Any Public Safety Eligible	1TAC22	VTAC13	90.20(c)(3) [80]
159.4725	SIMPLEX	Base-Fixed-Mobile	Any Public Safety Eligible	1TAC23	VTAC14	90.20(c)(3) [80]
161.8000	157.2500	Mobile-Fixed	Allocated for Public Safety Use in 33	1TAC180	VTAC17	90.20(g)
	SIMPLEX	Base-Fixed-Mobile	Inland VPCAs/ISAs	1TAC24	VTAC17D	
154.2800	SIMPLEX	Base-Fixed-Mobile	Fire	1FIR9	VFIRE21	90.20(c)(3) [19]
154.2650	SIMPLEX	Base-Fixed-Mobile	Fire	1FIR7	VFIRE22	90.20(c)(3) [19]
154.2950	SIMPLEX	Base-Fixed-Mobile	Fire	1FIR11	VFIRE23	90.20(c)(3) [19]
154.2725	SIMPLEX	Base-Fixed-Mobile	Fire	1FIR8	VFIRE24	90.20(c)(3) [19]
154.2875	SIMPLEX	Base-Fixed-Mobile	Fire	1FIR10	VFIRE25	90.20(c)(3) [19]
154.3025	SIMPLEX	Base-Fixed-Mobile	Fire	1FIR12	VFIRE26	90.20(c)(3) [19]
155.3400	SIMPLEX	Base-Fixed-Mobile	EMS	1EMS14	VMED28	90.20(c)(3) [40]
158.3475	SIMPLEX	Base-Fixed-Mobile	EMS	1EMS15	VMED29	90.20(c)(3) [40]
155.4750	SIMPLEX	Base-Fixed-Mobile	Law Enforcement	1LAW16	VLAW31	90.20(c)(3) [41]
155.4825	SIMPLEX	Base-Fixed-Mobile	Law Enforcement	1LAW17	VLAW32	90.20(c)(3) [41]
159.4725	151.1375	Mobile Temporary	Any Public Safety Eligible 136.5 Hz CTCSS TX		VTAC33	90.20(c)(3) [80]
158.7375	154.4525	Mobile Temporary	Any Public Safety Eligible 136.5 Hz CTCSS TX		VTAC34	90.20(c)(3) [80]
159.4725	158.7375	Mobile Temporary	Any Public Safety Eligible 136.5 Hz CTCSS TX - PRIVATE Only		VTAC35	90.20(c)(3) [80]
151.1375	159.4725	Mobile Temporary	Any Public Safety Eligible 136.5 Hz CTCSS TX		VTAC36	90.20(c)(3) [80]
154.4525	158.7375	Mobile Temporary	Any Public Safety Eligible 136.5 Hz CTCSS TX		VTAC37	90.20(c)(3) [80]
158.7375	159.4725	Mobile Temporary	Any Public Safety Eligible 136.5 Hz CTCSS TX - PRIVATE Only		VTAC38	90.20(c)(3) [80]
MHz	MHz		NTIA VHF Law Enforcement Channels			
167.0875	SIMPLEX	Base-Fixed-Mobile	LE Calling (Direct) Analog - 167.9 Hz CTCSS TX		LE A	FCC Public Notice DA 01-1621
167.0875	162.0875	Mobile-Fixed	LE Tactical Analog - 167.9 Hz CTCSS TX		LE 1	FCC Public Notice DA 01-1621
167.3500	162.2625	Mobile-Fixed	LE Tactical P25 Digital - 969F NAC		LE 2	FCC Public Notice DA 01-1621
167.7500	162.8375	Mobile-Fixed	LE Tactical P25 Digital - 969F NAC		LE 3	FCC Public Notice DA 01-1621
168.1125	163.2875	Mobile-Fixed	LE Tactical P25 Digital - 969F NAC		LE 4	FCC Public Notice DA 01-1621
168.4625	163.4250	Mobile-Fixed	LE Tactical P25 Digital - 969F NAC		LE 5	FCC Public Notice DA 01-1621
167.2500	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct for LE 2) P25 Digital - 969F NAC		LE 6	FCC Public Notice DA 01-1621
167.7500	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct for LE 3) P25 Digital - 969F NAC		LE 7	FCC Public Notice DA 01-1621
168.1125	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct for LE 4) P25 Digital - 969F NAC		LE 8	FCC Public Notice DA 01-1621
168.4625	SIMPLEX	Base-Fixed-Mobile	LE Tactical (Direct for LE 5) P25 Digital - 969F NAC		LE 9	FCC Public Notice DA 01-1621
MHz	MHz		NTIA VHF Incident Response Channels			
169.5375	164.7125	Mobile-Fixed	Incident Calling Analog - 167.9 Hz CTCSS TX		NC 1CALL	FCC Public Notice DA 01-1621
170.0125	165.2500	Mobile-Fixed	Incident Tactical Analog - 167.9 Hz CTCSS TX		IR 1	FCC Public Notice DA 01-1621
170.4125	165.9625	Mobile-Fixed	Incident Tactical Analog - 167.9 Hz CTCSS TX		IR 2	FCC Public Notice DA 01-1621
170.6875	166.5750	Mobile-Fixed	Incident Tactical Analog - 167.9 Hz CTCSS TX		IR 3	FCC Public Notice DA 01-1621
173.0375	167.3250	Mobile-Fixed	Incident Tactical Analog - 167.9 Hz CTCSS TX		IR 4	FCC Public Notice DA 01-1621

*For informational purposes only, not part of the ANS Table 1 - August 2, 2010 Page 1 of 5

Common Channel Naming Working Group

- Current Activities
  - Revise APCO/NPSTC ANS 1-104-1-2010
  - Integrate 700 MHz Air-Ground Channels
  - Reformat Appendix Tables to follow NIMS ICS-217A format
  - Permits export to IAPs, NPSTC PAM tool
  - Add 155.1600 as a common-use channel for SAR
  - Correct a number of typos in the tables

Appendix* - Table 2: Sorted by Frequency

Subscriber Channel Configuration (B, F, M)	Common Name		Eligible Users	Subscriber RX Freq (MHz)	RX Tone or NAC	Subscriber TX Freq (MHz)	Tx Tone or NAC	Dev	Pwr	Mode A or D	Limitations
	Long Name	Short Name									
FCC 30 MHz Public Safety Band											
F, M	LLAW1	LLAW1	Law Enforcement	39.4600	156.7	45.8600	156.7	W	H	A	90.20(d)(15)
B, M	LLAW1D	LLAW1D	Law Enforcement	39.4600	156.7	39.4600	156.7	W	H	A	90.20(d)(15)
F, M	*LFIRE2*	*LFIR2*	*Fire **Proposed***	*39.4800*	156.7	*45.8800*	156.7	W	H	A	*Prop. 90.20(d)(19)*
B, M	*LFIRE2D*	*LFIR2D*	*Fire **Proposed***	*39.4800*	156.7	*39.4800*	156.7	W	H	A	*Prop. 90.20(d)(19)*
F, M	LLAW3	LLAW3	Law Enforcement	45.8600	156.7	39.4600	156.7	W	H	A	90.20(d)(15)
B, M	LLAW3D	LLAW3D	Law Enforcement	45.8600	156.7	45.8600	156.7	W	H	A	90.20(d)(15)
F, M	*LFIRE4*	*LFIR4*	*Fire **Proposed***	*45.8800*	156.7	*39.4800*	156.7	W	H	A	*Prop. 90.20(d)(19)*
B, M	LFIRE4D	LFIR4D	Fire	45.8800	156.7	45.8800	156.7	W	H	A	90.20(d)(19)
FCC 150 - 162 MHz Public Safety Band											
B, M	VTAC11	VTAC11	Any Public Safety Eligible	151.1375	156.7	151.1375	156.7	N	H	A	90.20(d)(28),(80)
F, M	VTAC36	VTAC36	Any Public Safety Eligible	151.1375	156.7	159.4725	136.5	N	H	A	90.20(d)(28),(80)
B, M	VFIRE22	VFIR22	Fire	154.2650	156.7	154.2650	156.7	N	H	A	90.20(d)(19),(28)

Common Channel Naming Working Group

- Current Activities
  - Revise APCO/NPSTC ANS 1-104-1-2010
  - Updated document will be submitted to the Governing Board for approval next 2-3 weeks
  - Submit updated document to APCO in April for ANS vetting process
- Future Activities
  - Common Naming of 700 MHz Transportable System talkgroups
  - Common Naming best practice for 700 MHz Low Power channels
  - Common Naming best practice for Statewide Interop channels

Interoperability Discussion

- Cross Border Working Group – Barry Luke, NPSTC Deputy Executive Director
- Radio Interoperability Best Practices Working Group – Mark Schroeder, Chair
- General Comments from I/O Chair

Project 25 Technology Interest Group (PTIG) Stephen Nichols, Director

International Wireless and Communications Expo

NPSTC Meeting March 20, 2014

Las Vegas, Nevada

Project 25 Technology Interest Group

Project 25 Update

Presented by:

Stephen Nichols,

Director, Project 25 Technology Interest Group

www.project25.org

Project 25 Technology Interest Group

What we do:

- Support Project 25 technology, nurturing Project 25's adoption, growth, and expansion
- Provide an information forum for users and manufacturers
- Manage education and training on Project 25
- Create and distribute Project 25 information
- Support the TIA standards process
- Offer Users access to the standards process without the rigor of TIA membership
- Maintain a "neutral ground" among the competing manufacturers and providers

Project 25 Products and Services Available

PTIG Member Organizations www.Project25.org	Fixed Stations & Repeaters	Mobile & Portable Radios	Consoles	Networks	Software	Test Equipment	Systems Integration	Consultant Services
AECOM								
AEROFLEX								
AIRWAVE SOLUTIONS								
AIRBUS DS COMMS (FORMERLY CASSIDIAN)								
ANRITSU								
AVTEC								
CATALYST COMMUNICATIONS								
COBHAM AVIONICS								
CODAN RADIO (FORMERLY DANIELS)								
CYNERGYZE								
DVSI								
EF JOHNSON								
ETHERSTACK								
FEDERAL ENGINEERING, INC								
GENESIS GROUP								
HARRIS CORPORATION								
ICOM AMERICA								
IDA CORPORATION								
JVC KENWOOD								
MIDLAND RADIO								
MOD-U-COM								
MOTOROLA SOLUTIONS								
PANTEL INTERNATIONAL								
POWERTRUNK								
RELM WIRELESS								
SIMOCO								
SPECTRA ENGINEERING								
STANDARD COMM PTY LTD - GME								
TAIT COMMUNICATIONS								
TECHNISONICS								
TELEX RADIO DISPATCH								
VERTEX STANDARD								
WIRELESS PACIFIC								
ZETRON								
34	15	14	13	15	5	4	15	5

34 Vendors for Project 25 Equipment and Services

15 fixed station/repeater suppliers

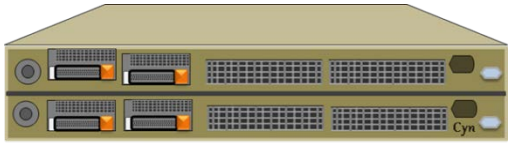
14 Subscriber suppliers

13 console suppliers

15 network providers

4 test equipment suppliers

5 consultant services



Available in VHF, UHF, 700, 800, and 900 MHz

Home | Contact Us

Project25 Technology Interest Group

search...

Thursday, February 5, 2015

NEWS & EVENTS | PURPOSE | MEMBERSHIP | TECHNOLOGY | COMPLIANCE ASSESSMENT | PRODUCTS | DOCUMENTS

The Project 25 Technology Interest Group Releases a New List of P25 CAP Tested Radios

The Project 25 Technology Interest Group has just published a new P25 CAP Tested Radios List on the Project25.org website. The list was developed in response to government agency radio users who were not able to get P25 CAP test data from the DHS website that is currently under reconstruction. The table lists products offered that have been through P25 CAP testing and have been previously listed on the DHS Website. The DHS site is currently under redesign and not available. To fully understand the specifics of the tests run and which radios were tested for interoperability it is suggested that you refer to specific CAP test documents and Suppliers Declarations of Compliance (SDOCs) from each company. These can be accessed using the company links or by contacting the company representative in the 4th column.
The Table can be reviewed or downloaded using the link below.

P25_Cap_tested_radios_REV_8__150129.pdf

The Latest News

- P25 Standards Meeting Notes now available from the TIA TR-8 Denver Meetings
  Friday, January 30, 2015
- NPSTC Recommends P25 for Communications Interoperability
  Friday, January 30, 2015
- The Project 25 Technology Interest Group Releases a New List of P25 CAP Tested Radios
  Friday, January 30, 2015

Upcoming Events

TIA TR-8 Project 25 Standards Meetings February 2015, Phoenix AZ

Project 25 Technology Interest Group PTIG

New Documents available at www.Project25.org

- P25 Frequently Asked Questions

  Written to officer, firefighter (non technologist) level
- P25 Updated Capability Guide

  Added Infrastructure interfaces and link to Statement of Requirements
- P25 Standards Update Summary

  Summary of the latest P25 Standards Meetings with user benefits defined
- P25 Steering Committee Approved List of Standards

  Updated from the most recent P25 Standards meeting
- P25 Feature Translator

  link to NPSTC PAM tool

Project 25 Technology Interest Group PTIG

New Documents available at www.Project25.org

- P25 CAP Tested Radio Products listing

  The DHS sponsored Website that has hosted CAP test data and SDOCs for P25 manufacturers has been off air and unavailable. PTIG now provides a P25 CAP tested Product List document with direct links to Company data bases or POC info to improve accessibility to each manufacturer's copies of CAP test documents and SDOCs. PTIG does not intend to become the repository for CAP test data but offers this in the interim until the DHS site is renewed.

- New White paper: P25 Vocoder Improvements

  A detailed report of the numerous audio improvements made possible through the latest P25 Vocoder design.

Project 25 Technology Interest Group PTIG

Projects Underway 2015

- New P25 List of Systems for the US and Territories. Includes name of system and frequency band, organized by State.

  Including: 599 P25 Phase 1 Systems, 110 P25 Phase 2 Systems

  This resource will allow Information sharing between P25 systems in different regions. It can be used by visiting agencies to identify the Local/Statewide P25 systems available to facilitate interoperable communications for mutual aid

- Valuing mission critical radio services:

  A study of the economic value of land mobile radio spectrum in Australia. Thanks to Australian Radio Communications Industry Association and Geoff Spring APCO Austrailasia

Project 25: Interfaces & Services

AIR INTERACES

P25 FDMA COMMON AIR INTERFACE

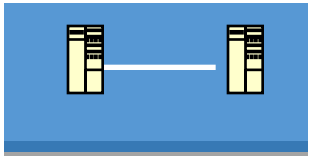
TRUNKING
Voice/Data

CONVENTIONAL
Voice/Data

P25 TDMA COMMON AIR INTERFACE

TRUNKING
Voice

WIRELINE INTERFACES



ISSI/CSSI

TRUNKING
Voice/Data/Control

CONVENTIONAL
Voice/Control

FSI

Conventional
Analog/Digital
Voice/Control

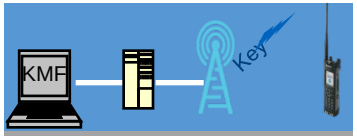
NETWORK MANAGEMENT

SECURITY INTERFACES

INTER- KMF

KEY FILL

SECURITY SERVICES



OTAR

TRUNKING/CONVENTIONAL

ENCRYPTION

Voice/Data

AUTHENTICATION

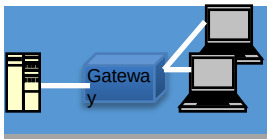
TRUNKING

DATA SERVICES

LOCATION

TIER 1
Conventional
TIER 2
Trunking/Conventional

DATA INTERFACES



DATA NETWORK INTERFACE

SUBSCRIBER DATA PERIPHERAL INTERFACE

P25 2014 Activity Summary (1)

- Air Interfaces
  - A standard for Dynamic Regrouping for the Air Interface was approved for publication.
    - The dynamic regrouping function was formerly manufacturer specific. The new P25 Dynamic Regrouping Standard creates a common specification for multi-vendor interoperability.
  - A revision of the Trunking Procedures Standard was approved for publication.
    - The revision corrects several errata that have been noted since the last publication.
  - A revision of the TDMA Transceiver Measurement Methods, TDMA Transceiver Performance Recommendations Standards were approved for publication.
    - A new test and associated performance specs were added.

P25 2014 Activity Summary (2)

- Security
  - A revision of the OTAR standard (multi-year effort) was approved for publication.
    - The Standard was clarified to prevent interoperability issues as an increasing number of vendors implement P25 OTAR.
  - A revision of the Key Fill Interface for mobiles and portables was approved for publication.
    - USB and RS-232 interfaces were included to expand applications and devices available.
  - An Addendum to the Security Services Overview standard was approved for publication.
    - The addendum adds an Informative overview of the key management service as it applies to voice, data, and authentication.

P25 2014 Activity Summary (3)

- Data
  - A revision of the IP Data Bearer Services Specification was approved for publication.
    - The Standard was clarified to prevent interoperability issues as an increasing number of vendors implement P25 Data applications.
  - A revision of the Tier 1 Location Standard was approved for publication.
    - The Standard was clarified to prevent interoperability issues as an increasing number of vendors implement P25 Location Standard Data applications.
- Wireline Interfaces
  - A revision of the ISSI Interoperability Tests to include TDMA was approved for publication.
    - The revisions adds a standard testing method of new Phase 2 TDMA systems interconnected with FDMA systems using the P25 ISSI multi-system interface

P25 Activity Summary 2015(1)

- Data
  - A revision of the Tier 2 Location Standard was approved for publication
    - The Standard was clarified to prevent interoperability issues as an increasing number of vendors implement P25 Location services.
- Air Interfaces
  - A revision of the Trunking Control Channel Messages Standard was approved for publication
    - The revision corrects several errata that have been noted since the last publication.
  - A revision of the Link Control Word Formats and Messages Standard was approved for publication
    - The revision corrects several errata that have been noted since the last publication.
  - A revision of the Conventional Conformance Tests, Basic and Advanced completed ballot
    - The revisions update the list of standard references and correct some errata noted since the last publication

P25 Activity Summary 2015 (2)

- Compliance Assessment Bulletins
  - TIA subject matter experts review published TIA test documents and recommend tests appropriate for use in P25 Compliance Assessment
    - The list of tests are documented in Recommended Compliance Assessment Test (RCAT) Telecommunications System Bulletins
    - The Steering Committee may then forward these to the DHS Compliance Assessment Program Governing Board for consideration when creating Compliance Assessment Bulletins (Testing CABs)
  - A revision to multiple RCATs were approved for publication
    - RCAT for Trunked Interoperability (FDMA and TDMA tests)
    - RCAT for TDMA Voice Channel Air Interface (Conformance and Performance tests)
    - RCAT for Conventional Mode Fixed Station Performance
    - RCAT for Conventional Mode Subscriber Performance
    - RCAT for Trunked Mode Subscriber Performance
    - RCAT for Trunked Mode Fixed Station Performance
    - These revision efforts primarily update all references to TIA published test documents. The FDMA Trunking Interoperability testing RCAT was also revised to include Trunking Conformance test recommendations.

P25 Work in Progress 2015(1)

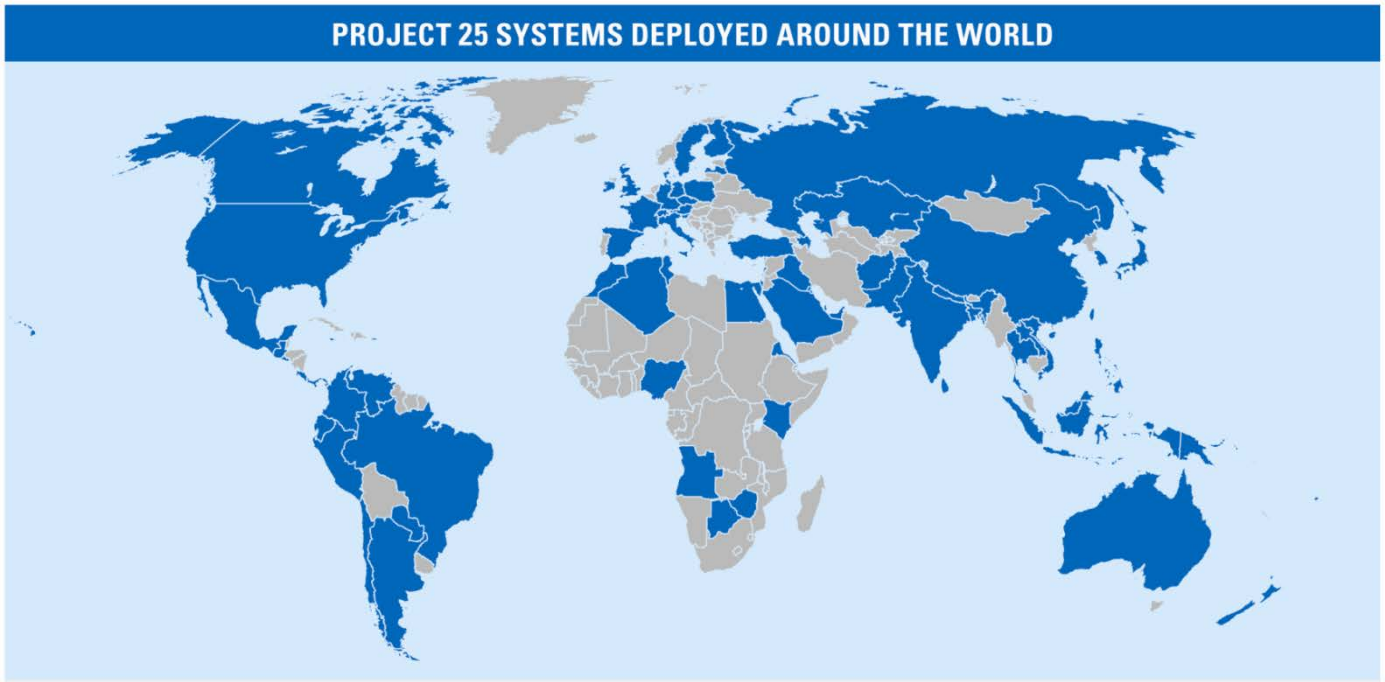
- Security
  - Link Layer Encryption is in progress.
    - This is a significant technology upgrade effort for improved Security for all air interfaces of P25. It protects control channel control messages, and hides group and individual IDs.
  - An addendum to the Key Fill Interface standard is in progress.
    - This will enable Key Fill Device (KVL) interface to a KMF, an Authentication Facility and another Key Fill Device
  - A revision to the OTAR Interoperability Test Standard is in progress.
    - This revision will align the Interoperability tests with the recently revised OTAR Messages and Procedures Standard.
- Wireline Interfaces
  - An addendum to the ISSI Messages and Procedures Standard is in progress.
    - The revision corrects several errata that have been noted since the last publication.
  - A revision to the Fixed Station Interface Standard is in progress.
    - This revision adds additional capabilities the most significant of which is Packet Data.

P25 Work in Progress 2015(2)

- Air Interfaces
  - A revision to the Conventional Procedures Standard is in progress.
    - This revision provides additional detail for the procedures associated with Conventional Data and a number of errata comments that have been noted since the last publication.
  - A revision to the Trunking Procedures Standard is in progress.
    - This revision provides additional detail for the procedures associated with Trunking Data

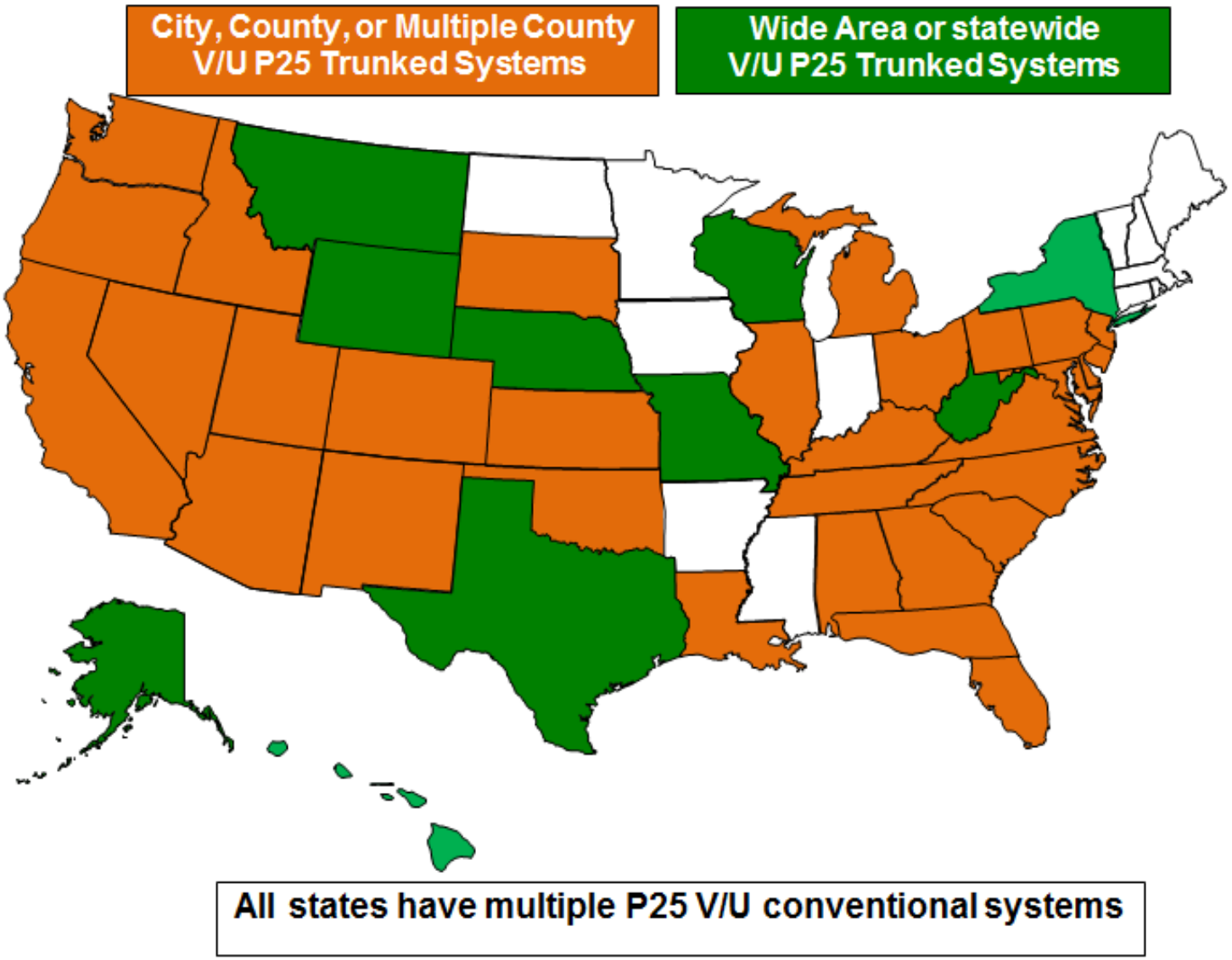
Worldwide Adoption

Project 25 systems are deployed in 83 countries

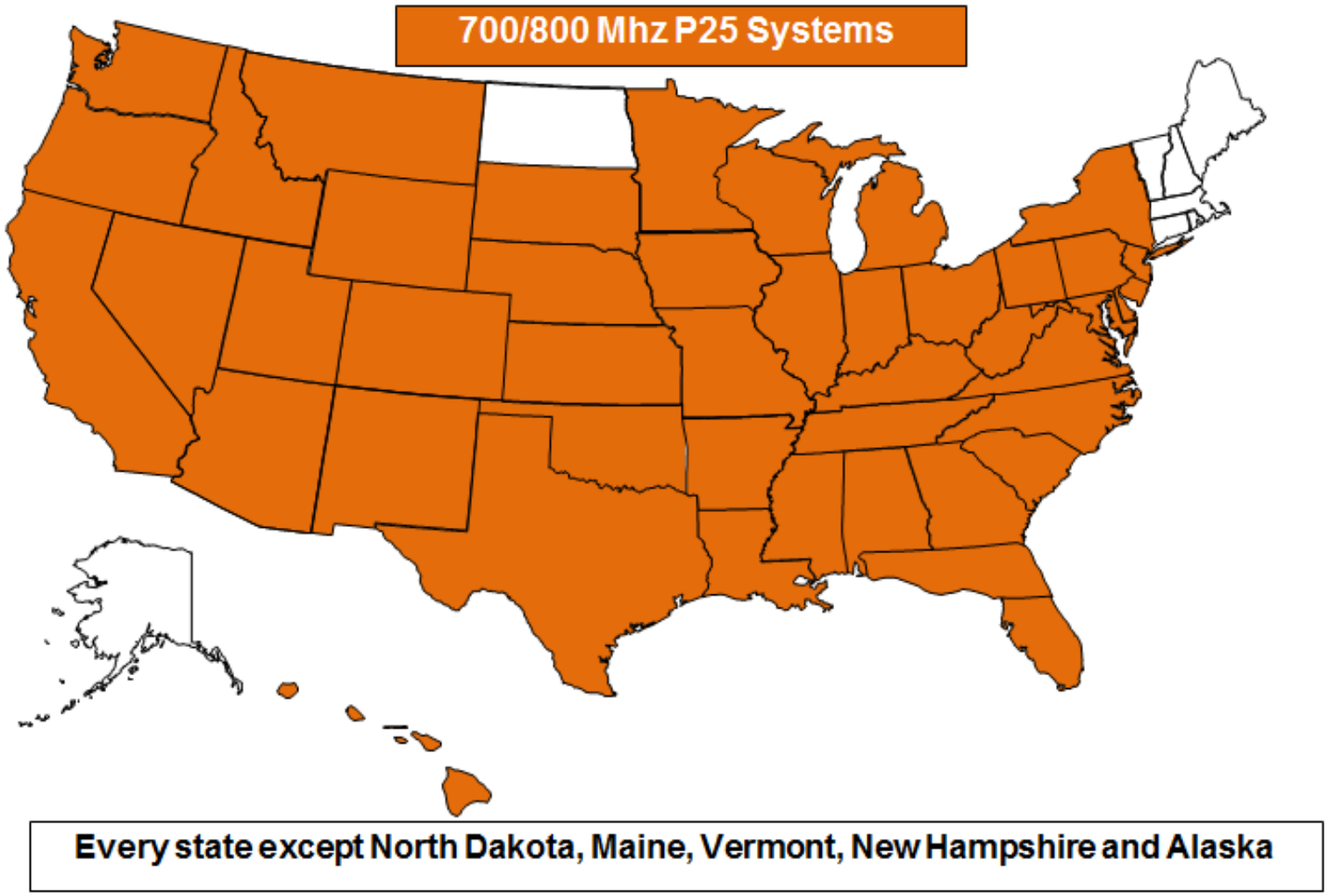


Afghanistan
Algeria
Angola
Antigua and Barbuda
Argentina
Australia
Austria
Azerbaijan
Bahamas
Bahrain
Bangladesh
Barbados
Bermuda
Botswana
Brazil
Brunei
Canada
Chile
China
Colombia
Costa Rica
Czech Republic
Denmark
Ecuador
Egypt
El Salvador
Eritrea
Fiji
Finland
France
Germany
Guam
Guatemala
Hong Kong
India
Indonesia
Iraq
Ireland
Israel
Italy
Jamaica
Japan
Kazakhstan
Kenya
Kuwait
Laos
Latvia
Lebanon
Luxembourg
Malaysia
Mexico
Morocco
Nepal
New Zealand
Nigeria
Pakistan
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Poland
Puerto Rico
Russia
Saudi Arabia
Singapore
Slovenia
South Korea
Spain
Sri Lanka
Sweden
Switzerland
Taiwan
Thailand
Trinidad and Tobago
Tunisia
Turkey
United Kingdom
United States
United Arab Emirates
Venezuela
Vietnam
Zimbabwe

Source: Project 25 Technology Interest Group (PTIG), July 2011



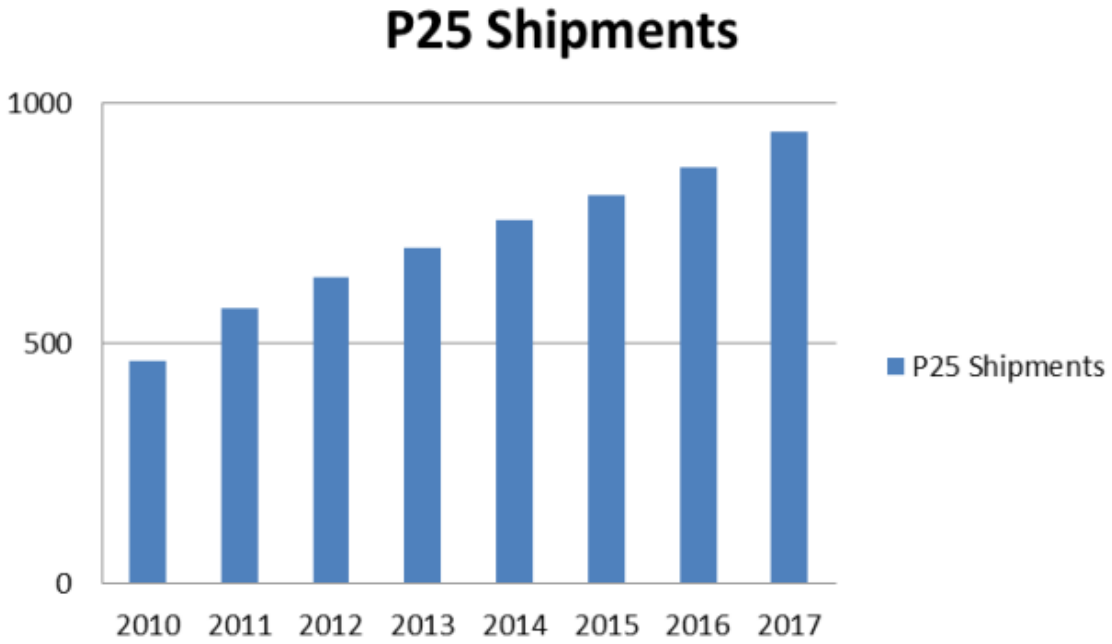
VHF/UHF P25 interoperability possible in every state



700/800 MHz P25 interoperability possible in 45 states

Next 3 Years: *P25 growth to continue*

- The “Push” to digital migration continues
- Need for additional capacity in urban areas (TDMA)
- Need for wide area systems (Phase 1 and Phase 2)
- P25 Momentum, it’s the “interoperable technology”



Forecast P25 Radio Shipments
Data Courtesy of: IHS Technology - Critical Communications Division

Project 25 Technology Interest Group: Commercial Members

ICOM

HARRIS assuredcommunications®

AIRBUS DEFENSE & SPACE

tait communications

CODAN RADIO COMMUNICATIONS

MOTOROLA SOLUTIONS

KENWOOD

COBHAM

EFJohnson TECHNOLOGIES JVCKENWOOD Group

RELM WIRELESS

AEROFLEX

TiL

Vertex Standard

SPECTRA ENGINEERING

catalyst communications technologies

AECOM

CYNERGYZE

MODUCOM

TELEX Radio Dispatch

DIGITAL VOICE SYSTEMS, INC. The Speech Compression Specialists

simoco

etherstack wireless software

PANTEL INTERNATIONAL

AVTEC consoles you can count on

MIDLAND

ZETRON

PowerTrunk

GME

FE

Wireless Pacific

IDA The Way for 2-Way

AIRWAVE

Anritsu

Genesis

Steve Nichols

Director, Project 25 Technology Interest Group

Director@project25.org

www.project25.org

NPSTC Organization Updates (continued)

TIA Update
NPSTC

Chris Lougee
Chair, Private Radio Section (PRS)
Telecommunications Industry Association

Vice President
Icom America, Inc.

Who is TIA?

- **Trade association**
- **Global information and communications technology (ICT) industry**
  - Standards development
  - Policy initiatives
  - Business opportunities
  - Market intelligence
  - Networking events.
- **Hundreds of members**

TIA "Policy"

- **Participate in policy decisions**
  - Impact the communications industry
- **Regulatory issues**
  - Affect member companies
- **Events, Publications and Filings**
- **Committees and Working Groups**

Wireless Communications Division (WCD)

Private Radio Section (PRS)

TIA "Technology & Standards"

- **Accredited by the American National Standards Institute (ANSI)**
  - Develop voluntary, consensus-based industry standards

- **12 engineering committees**

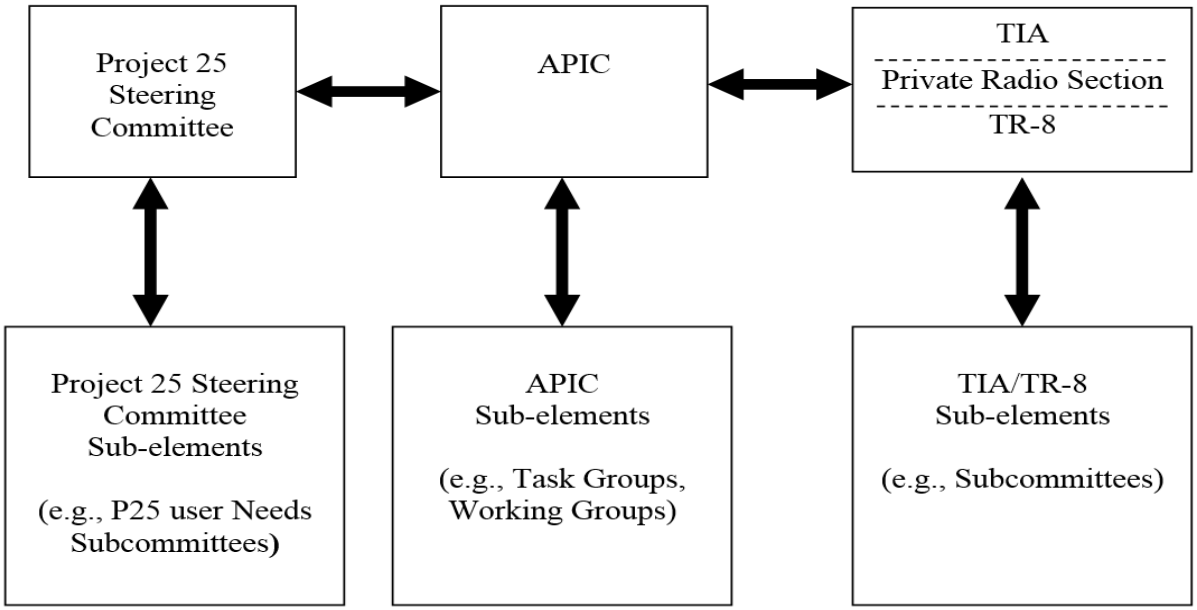
TR-8 "Mobile and Personal Private Radio Standards"

Formulation of TIA-102 Series standards for Project 25

“Standards” and “Policy” Working Together

Jim Downes
P25SC Chair
DHS, OEC

George Crouch
P25 SC Vice Chair
NASTD
State of SC



Julio Laguardia
UNS Chair
DOJ

Paul Gilbert
UNS Vice Chair
TX DOT
State of TX

Brandon Diemer
APIC Chair
BLM

Chris Lougee
PRS Chair
Icom America, Inc.

Andy Davis
TR8 Chair
Motorola Solutions, In

P25 User Needs Subcommittee (UNS)

Provides input to P25 Steering Committee

- Recommends Priorities of SOR content for consideration for standardization

Gathers input from a variety of sources

- Consideration for inclusion in the SOR

P25 Statement of Requirements (SOR)

- Equipment functionality critical for Public Safety
- P25 Steering Committee sends SOR priorities to APIC

Membership open to users

APCO Project 25 Interface Committee ("APIC")

Provides technical assistance to P25 and TIA

- Formulating, and preparing documentation for the Project 25 Standard.
- Recommendations to clarify or improve standards requirements

Address needs of the public safety communications community

- Technology studies
- Reviews operational requirements (SOR)
- Technology tests
- Draft technical concept papers.

"All volunteer" organization

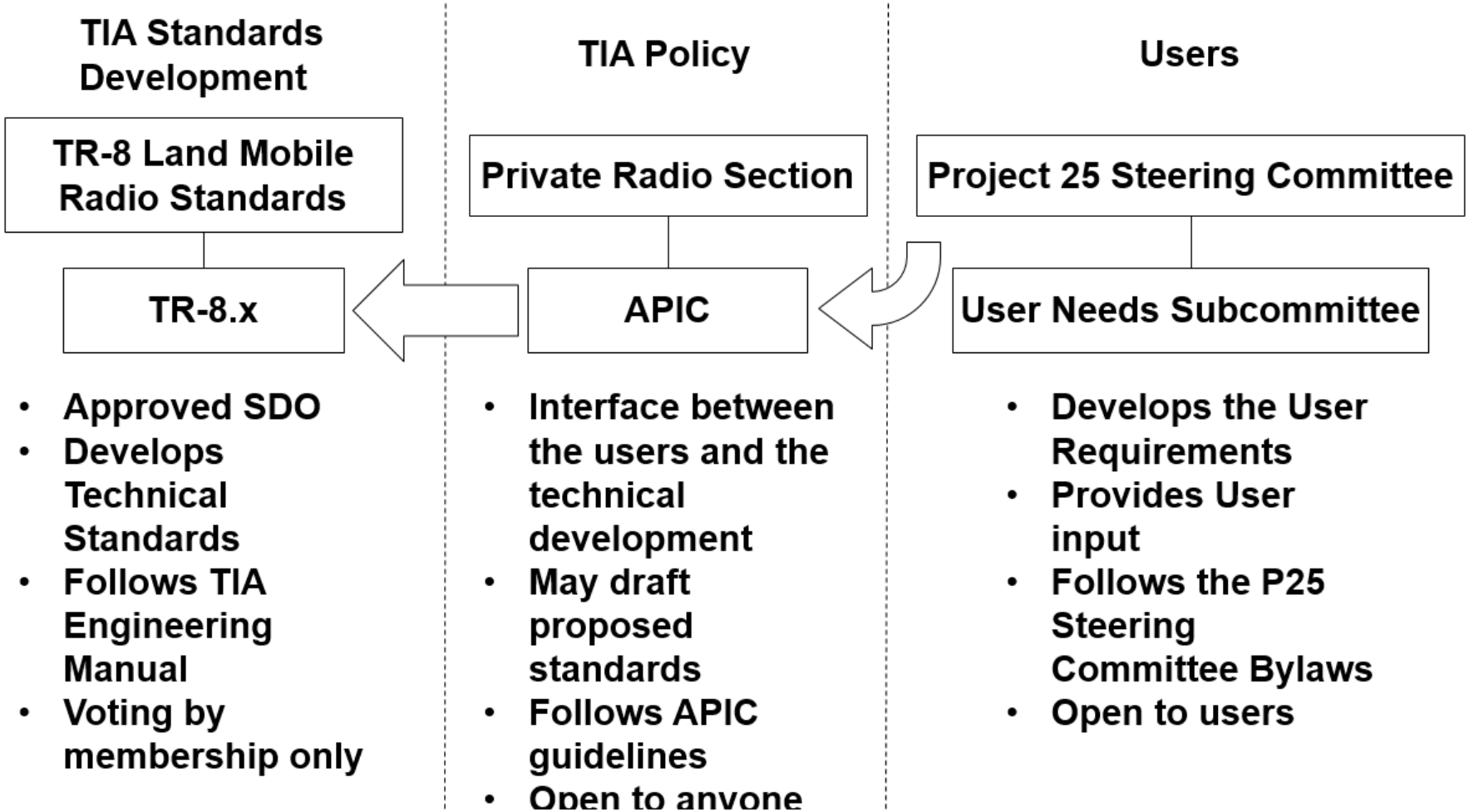
- Open to any organization, or individual, with an interest in developing P25 standards
- Wider and more diverse forum of interested participants than P25/TR8 members

Not a standards formulating body

Ad hoc committee of the TIA Private Radio Section

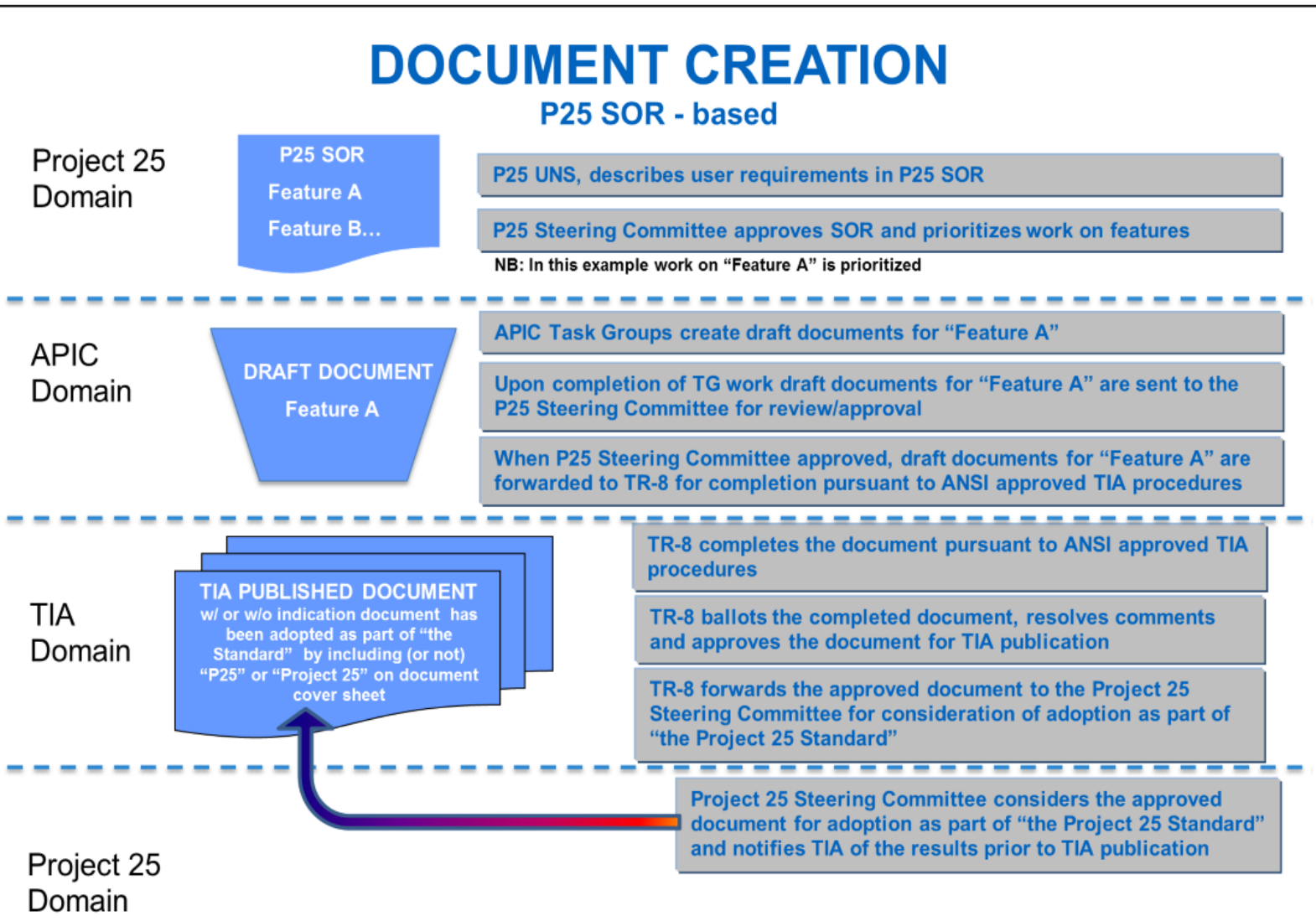
Join in … become a part of the P25 Standards Development process!!

TIA P25 Organizational Chart

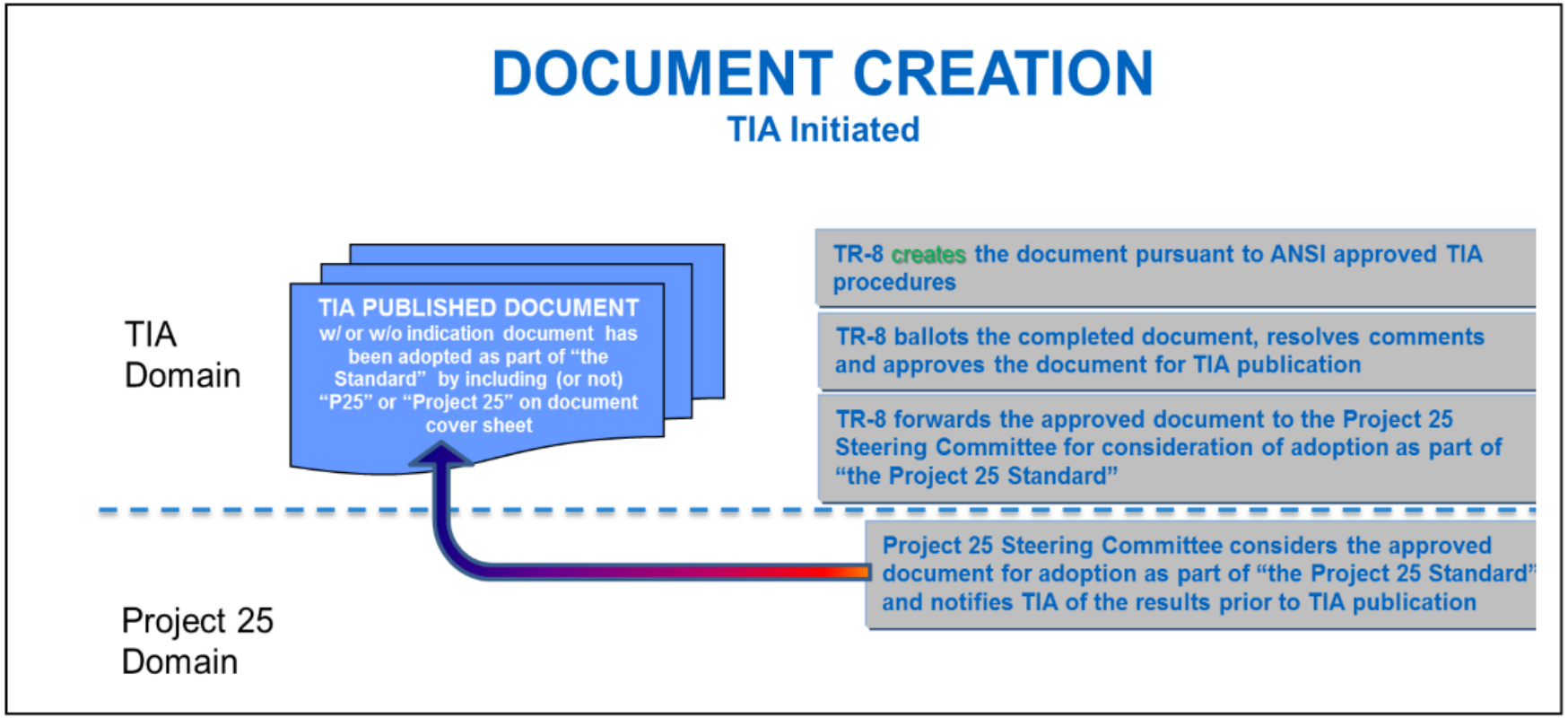


DOCUMENT CREATION

P25 SOR - based



TIA initiated (not P25 SOR based)



Current Activities

Standards

- *New standards*
- *Standards in process*
  - Steve Nichols, Director, PTIG

Policy

- *CAP Process*
- *700 MHz Deployable Trunked Channels*
- *700 MHz Petition to Reconsider*

Contact Information

Chris Lougee
Chair, Private Radio Section (PRS)

Vice President, Icom America, Inc.
425-450-6073
chrislougee@icomamerica.com

A brief update

Phil Kidner
Chief Executive
TCCA

What has been happening recently?

- Creation of 3GPP SA6.
- Election of Andrew Howell UK Home Office
- Election of Dave Chater-Lea ETSI WG4 (and Motorola) as second Vice Chair
- Participation by the US
- Working on inputs:
  - *Mission Critical Video over LTE*
  - *Mission Critical Data communications*

What has been happening recently?

- CCBG plenary meeting in February
- Welcomed Andy Thiessen to the meeting. He provided us with a US update.
- Gap analysis
- Targets for 2015

In the meantime

In European Public Safety:

- The UK procurement
- Upgrading and renewing TETRA plus MVNO
- TETRAPOL
- TEDS

Thank you

OMA UPDATE
NPSTC MEETING AT IWCE – LAS VEGAS, NEVADA
MARCH 20, 2015

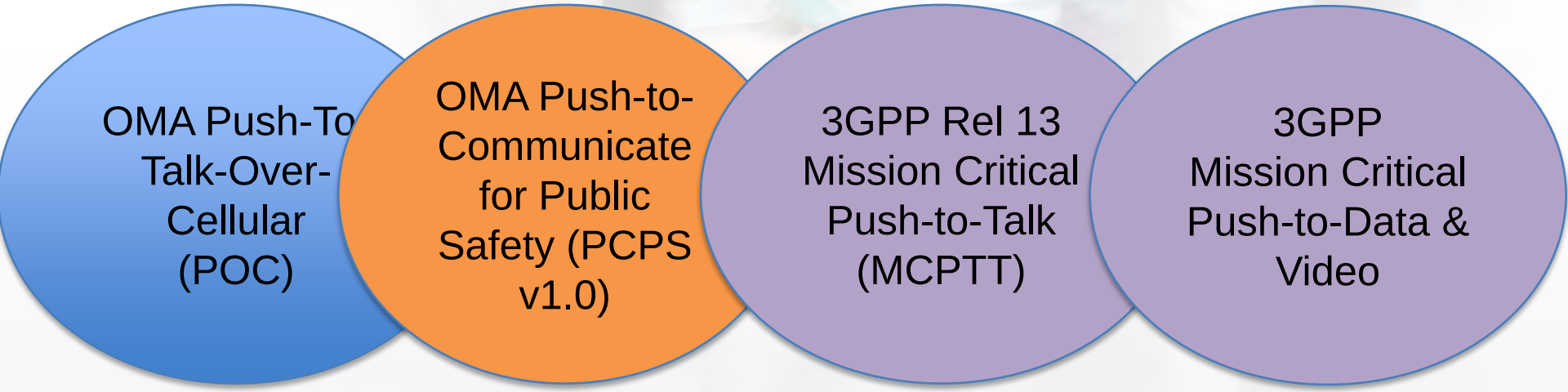
FRANK KORINEK
OMA BOARD MEMBER
MOTOROLA SOLUTIONS

WHAT IS OMA?

- OMA develops specifications for the application layer called service enablers. Enablers provide a standardized approach to tasks such as data gathering and transporting information from a network to a device and/or server.
- OMA enablers are network agnostic (i.e., deployable over any type of transport layer) but incorporate optimal aspects of each network (e.g., Mission Critical LTE capabilities when they become available).
- OMA also develops Application Programming Interfaces (API) to provide standardized interfaces to the service infrastructure residing within communication networks and on devices.
- OMA APIs include fundamental service capabilities such as SMS, MMS, Location Services, Presence Services, Payment and other core network asset services.
- OMA is complimentary to standards bodies including 3GPP and GSMA.
- OMA cooperates in a formal fashion with many other standards bodies including 3GPP, GSMA, etc. Our most active cooperation is with 3GPP.

Push To Talk/Data/Video STANDARDS REFRESHER

- During the November 2015 NPSTC meeting in San Antonio, OMA outlined the path for the only global Push-to-Talk/Communicate (voice, data, video) standards evolution and consolidation



Push To Talk/Data/Video STANDARDS UPDATE

- 3GPP established SA6 for Mission Critical Applications standards development

SA6 Leadership:

- Chair: Andrew Howell, UK Home Office
- Vice Chair: Suresh Chiturri, Samsung
- Vice Chair: David Chater-Lea, Motorola Solutions

Push To Talk/Data/Video STANDARDS UPDATE

- OMA completed Push-to-Communicate-for-Public-Safety (PCPS v1.0) Specification February 2015
  - Includes requirements, architecture, interfaces and protocol standards
- 3GPP requested OMA to release copyrights to PCPS v1.0
- OMA Board agreed to release the copyrights to 3GPP
- OMA-3GPP legal agreement is in the process of ratification among the 3GPP Organizational Partners
- Upon ratification, 3GPP will be able to bring PCPS specifications into 3GPP specifications and modify them as needed
  - 3GPP Release 13 Mission Critical Push To Talk (MCPTT) will be first 3GPP standard to include PCPS specifications
  - 3GPP Release 14 Mission Critical Data and Mission Critical Video standards may also include PCPS specifications

WHAT IS NEXT?

- Public Safety communities may decide to enhance and/or incorporate other OMA standards into their broadband evolution and deployment decisions, plans, roadmaps, etc.
- Possible OMA candidates for inclusion in Public Safety broadband deployments include:
  - OMA Device Management
  - OMA Location
  - OMA Presence
  - OMA Restful APIs
  - . . .

WHAT IS NEXT?

- OMA welcomes input and direction from NPSTC on how OMA can best help support the needs and requirements of First Responders around the world

ADDITIONAL INFORMATION

For additional information or to become engaged in OMA activities, please contact OMA's representatives to NPSTC:

Frank Korinek
Motorola Solutions, Director, Strategy and Standards
Board Member, Open Mobile Alliance
Frank.Korinek@motorolasolutions.com

Seth Newberry
General Manager, Open Mobile Alliance, Ltd.
snewberry@omaorg.org

Thank You

Governing Board Representative Update

Governing Board Representative Update

- FCC PSAP Architecture Task Force – Bob Brown, NPSTC Representative
  (*via teleconference)*

Governing Board Representative Update

- UL Standards Technical Panel (STP) – Chris Taylor, NPSTC Representative

Administrative Items

Administrative Items

- Social Media Update
- Future Meeting
  - Wednesday, May 6 and Thursday, May 7, 2015, Washington, DC, Office of the Chief Technology Officer (OCTO) Building
  - Wednesday, September 9 and Thursday, September 10, 2015, Norman, OK

Executive Session

The member organizations of the National Public Safety Telecommunications Council are grateful to the Department of Homeland Security's Science and Technology Directorate, Office for Interoperability and Compatibility (OIC) and the National Protection and Programs Directorate, Office of Emergency Communications (OEC) Points of view or opinions expressed are those of the originators and do not necessarily represent the official position or policies of the U.S. Department of Homeland Security.