NPSTC

Governing Board Meeting

Thursday, September 6, 2018

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

Screen Share: https://join.me/NPSTCsupport1

Submit Questions Online

Send email to support@npstc.org

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Welcome and Opening

- Ralph Haller, NPSTC Chair
  - Call to Order
  - Roll Call
- Technical Tips
  - Webinar Access Information: https://join.me/NPSTCsupport1
  - Online participants submit questions to support@npstc.org.
  - Do NOT use the the join.me chat bubble, it will be displayed to all.
  - To mute your phone, press *6, NOT hold.
  - Email attendance to attend@npstc.org.

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 Chiefs 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)
  - The Critical Communications Association (TCCA)

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Welcome

- Liaison Organizations
  - Federal Communications 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)
  - University of Melbourne Center for Disaster Management and Public Safety (CDMPS)

NPSTC

Federal Partners Update

Department of Homeland Security (DHS), Office for Interoperability and Compatibility (OIC) - Norman Speicher, Program Manager

Department of Homeland Security (DHS), Office of Emergency Communications (OEC) - Dusty Rhoads, Branch Chief

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DHS SCIENCE AND TECHNOLOGY

Next Generation First Responder

Integration Handbook

Homeland Security

Science and Technology

September 6, 2018

Norman Speicher

Project Manager

Office for Interoperability and Compatibility

DHS Science and Technology Directorate

Next Generation First Responder (NGFR) Apex Program

- NGFR **develops, adapts and integrates cutting-edge technologies** to make responders better protected, connected and fully aware.
- In year 4, NGFR focuses on **integrating, testing and transitioning** NGFR-developed technologies and rolling out the **NGFR Integration Handbook** for industry comment.

PROTECTED

Defending against life-threatening hazards

- Environmental sensors identify unsafe conditions so responders can exit in time
- Physiological monitoring sensors help responders get medical assistance when they need it
- Enhanced duty uniforms and personal protective equipment keep responders safe, no matter the emergency

CONNECTED

Having a **lifeline** when it's needed most

- Intelligently-routed communications streamline connectivity and allow responders to focus on the mission
- Deployable networks provide connectivity anywhere, anytime, under any conditions
- Universal data standards make interoperability and information-sharing easy and secure

FULLY AWARE

Making informed decisions that **save lives**

- Situational awareness tools provide critical context even before responders arrive on scene, saving vital time
- Advanced data analytics and alerting tools convey the right information at the right time
- Cutting-edge location-based services ensure that incident commanders know where their responders are and if they need help

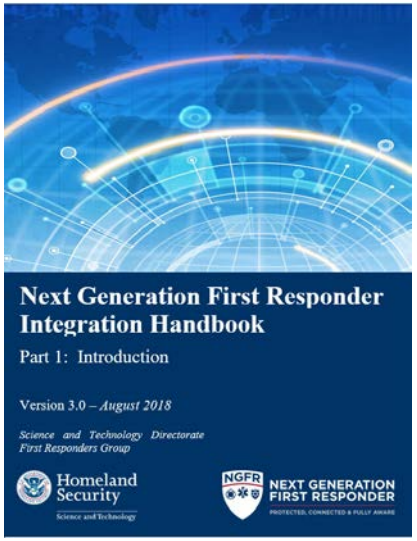
NGFR Integration Handbook

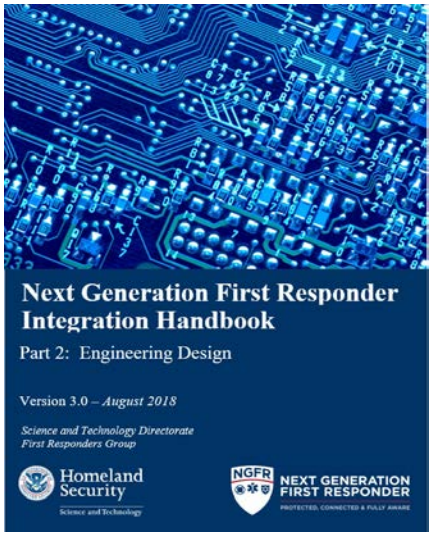
- The NGFR Integration Handbook outlines a "**plug-and-play**," **standards-based environment** that enables commercially-developed technologies to integrate with existing first responder infrastructure.

- Guides industry system developers and vendors on interoperability requirements that may facilitate integration.

- Reduces barriers to entry into the first responder marketplace and opens doors to entrepreneurs, while *lowering costs and increasing choices for public safety organizations.*

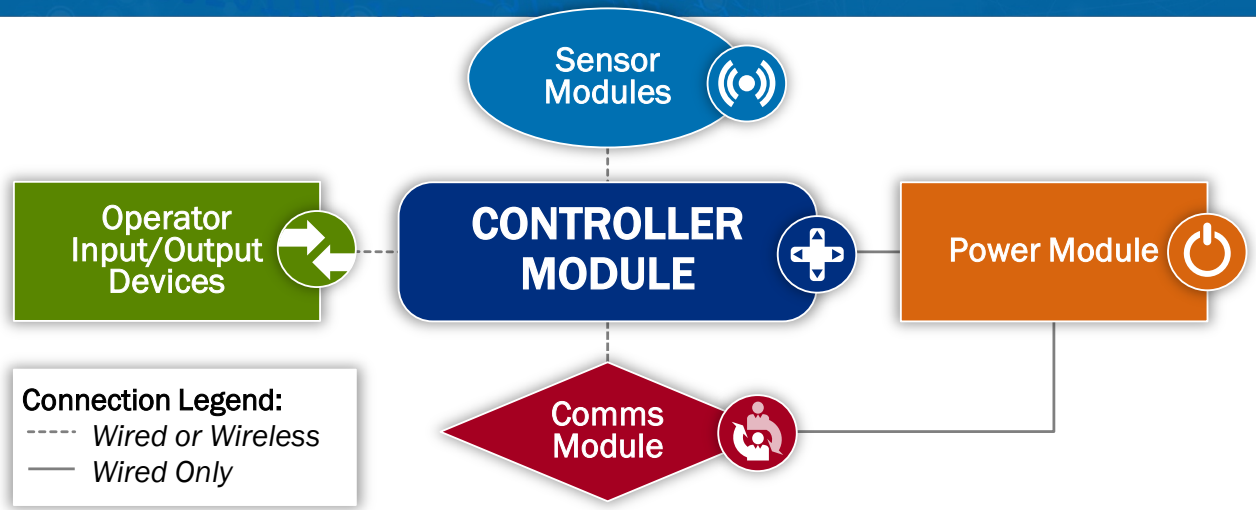
NGFR Integration Handbook





	Part 1 – Executive Summary	**Part 2 – Engineering Design**	**Part 3 – Technical Supplement**
Audience	Executives and Planners	Technical Management	Technical Teams
Description	Provides a high-level overview of the NGFR SmartHub system concept and the various system components.	Provides system level view of hardware and software components required to implement the NGFR SmartHub architecture.	Provides additional details needed by development and test teams to facilitate integration.

NGFR Architecture



Controller Module (self-contained)

- Power Source
- Display
- Manual Input (Keyboard/Touchscreen)
- Personal Area Network (PAN) Comms
- Wide Area Network (WAN) Comms
- Built-In Speaker/Microphone
- Audio/Video Recording
- Geolocation
- Sensor Connections
- Basic Applications

Communications (Comms) Module

- Internal Short-Term Power Source
- Connect to Power Module
- Connect to Comms Systems/Devices:
  - *Bluetooth*
  - *Wi-Fi*
  - *LTE*
  - *LMR*
  - *SATCOM*
  - *FirstNet LTE*
  - *Datacasting*
  - *Ethernet*
- Manage Comms Bandwidth/Priority

Sensor Modules

- Internal Short-Term Power Source
- Communicate with Controller

Power Module

- Long-Term Power to all Devices
- Rechargeable/Field Exchangeable

Operator Input/Output Devices

- External Cameras
- Headset/Microphone
- External Display

Handbook Cycle

Version 1.0

- Conceptually conceived from Project Responder 4 & 5 requirements
- Internally produced by engineers and refined by NGFR team
- Finished July 2017

Version 2.0

- Validated by DHS S&T performers and updated to reflect current state
- Public Release February 2018

Version 3.0

- Received feedback and comment from industry, public safety and federal partners, all incorporated by NGFR Integration Team
- Integration approach tested at NASA JPL
- Public Release August 2018

How to Get Involved

- Go to: https://www.dhs.gov/science-and-technology/ngfr/handbook
- Download the Handbook
- Download the Comment Matrix
- Send the Handbook to your agency's vendors
- Have Questions? Want to provide comments and feedback? Email: NGFR@hq.dhs.gov
- Watch our Live Tech Talk at: https://www.dhs.gov/science-and-technology/st-live-tech-talks
- Participate in our upcoming webinars! Topics include:
  - Physiological Monitoring
  - Situational Awareness
  - Location Services – and more!

Homeland Security

Science and Technology

NPSTC

FirstNet NPSBN Development

FirstNet
Jeff Bratcher, Chief Technology and Operations Officer

Public Safety Advisory Committee
Paul Patrick, Interim Chairman

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Nationwide Public Safety Broadband Network

Jeff Bratcher | Chief Technology and Operations Officer

FirstNet in 2018

- Launch **FirstNet Core** – March 2018 ✓
- Nationwide buildout of state **RANs** and **Band 14** Underway

- Grow **Applications** and **Devices Ecosystem** Underway
- Test current/future network features in **Innovation & Testing Lab** Underway

- Support **Network Operations** and **Pilots** Underway

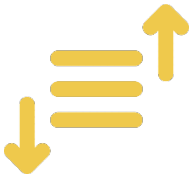
Over 150,000 connections from 2,500 agencies have adopted FirstNet

FirstNet

5 EARLY BENEFITS OF FIRSTNET

Asset Tracking & Location Services

Push-to-talk



Priority & Preemption

Secure Data Sharing

Customer Care & Advocacy

Richmond, VA

We heavily use mobile data in order to be more efficient in delivering information to responders and to retrieve information independently from the communications center. **FirstNet allows us to have priority and preemption so it is available to us all the time.**"

– **Stephen Willoughby**, Director and Chief of the Department of Emergency Communications, City of Richmond, VA

Brazos County, TX

"When you have one network to manage your team and share information with other agencies, we don't have a silo agency with all the information in one place. Instead, **we have true interoperability and better communications to share information over a secure network."**

– Lieutenant **Thomas Randall** (Ret.), Brazos County, TX, Sheriff's Office

Brookfield, CT

"The Connecticut Incident Management team who we contacted to help us work with AT&T, said, 'Look, we know you guys are down on phones. We're going to make it happen.' And it was done within two hours. **We got confirmation, got a quick lesson on [FirstNet devices], and we were good to go.**"

– **Andrew Ellis**, Assistant Fire Chief, Brookfield, CT, Fire Department

FY 2019 Priorities

NETWORK

Continued build, operation and evolution of the NPSBN

PUBLIC SAFETY ADVOCACY

Continued outreach and advocacy to federal, tribal, state and local public safety and associations to ensure the network meets their needs

INNOVATION

Drive innovation and seek technologies to advance public safety communications

REINVESTMENT

In-depth analysis and recommendations for future reinvestment efforts on behalf of public safety

FirstNet

PSAC Update

Paul Patrick| Interim PSAC Chairman

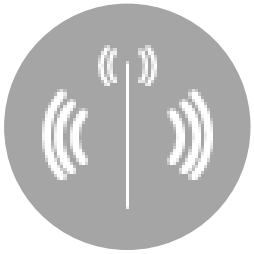
PSAC Summer 2018 Activities

Priority Assignment Overview Webinar

July 24

TWG In-Person Meeting

Aug. 15-16



Uplift Request Tool Webinar

August 27

Executive Committee In-Person & GNOC Tour

Aug. 29-30

FirstNet

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Technology and Broadband Committee

Kim Coleman Madsen, Chair
Andy Thiessen, Vice Chair
Dr. Michael Britt, Vice Chair

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Public Safety Communications Research (PSCR)

Dereck Orr, PSCR Division Chief

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LMR LTE Integration and Interoperability Working Group

Chris Kindelspire, Chair

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LMR LTE Integration and Interoperability Working Group

- Finalizing Report on Mission Critical Push to Talk (MCPTT) User ID
  - MCPTT display ID's are a key component of first responder safety.
- Key findings include:
  - Of the three MCPTT identity data fields available, the User ID should be used to manage first responder identity.
  - A standardized approach to User ID should be created to ensure a common display will occur across the NPSBN.
  - Standardized User ID structures should account for devices assigned to individual public safety users as well as shared devices and specialty devices (e.g. dispatch consoles, consoles in fire stations, hospital ED's, etc.).

LMR LTE Integration and Interoperability Working Group

- Finalizing Report on Mission Critical Push to Talk (MCPTT) User ID, continued.
  - Expect report to be finalized in October.
  - Full Technology and Broadband Committee will review and provide input.
  - Report should reach the Governing Board for approval in November.

Public Safety Internet of Things (PS IoT) Working Group

Barry Fraser, Chair

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Public Safety
Internet of Things Working Group

- Development and review of new use cases is almost completed.
  - Use Case 7 on law enforcement response to a school shooting scenario with multi-agency and multi-PSAP coordination.
  - Use Case 8 on severe weather event with loss of macro network coverage, use of direct mode, and coordination and data sharing with secondary responders.

Public Safety
Internet of Things Working Group

- Next Steps:
  - Consolidate all use cases into a single document; do final review of all use cases to identify benefits, challenges and risks.
  - Begin work on an outreach report that highlights the main issues that public safety agencies need to consider when adopting IoT.
  - Begin planning for report to the Governing Board identifying key issues and concerns with PS IoT development and implementation.

Unmanned Aircraft Systems (UAS)/Robotics Working Group

Dr. Michael Britt, Chair

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UAS / Robotics Working Group

- Has changed to quarterly meetings.
  - **July:** Prof. Robin R. Murphy, PhD, Professor of Computer Science & Engineering, Texas A&M University, presented on work being done by the Center for Robot-Assisted Search and Rescue (CRASAR).
    - Lessons learned from Hurricanes Harvey and Irma and the Kilauea volcano eruption.
  - **November:** Focus has changed to Robotics and are working on details for a presentation on the use of robotics by public safety.
  - Quarterly Meeting Schedule shifting to November (February, May, August, November).

Broadband Emerging Technologies Working Group

Kim Coleman Madsen, Chair

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Broadband Emerging Technologies Working Group

- Continuing to review issues of significance for public safety agencies.
  - **June**: Dr. Eric Jing Du, Assistant Professor at Texas A&M University, provided an update on their PSCR funded research to study cognitive overload in first responders.
  - **July**: Presentation by Niki Papazoglakis, Harris County, Texas, on situational awareness applications.
  - **August**: Policy Round Table on NG911 data sharing and MCPTT for secondary responders.
  - **September**: DHS S&T presentation on NGFR Technology Implementation Handbook (*proposed*)

Video Technology Advisory Working Group (VTAG)

John Contestabile, Chair

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Video Technology Advisory Group

- **July** - David A. Makin, PhD, Lab Director: Complex Social Interactions Lab, Department of Criminal Justice and Criminology at Washington State University, presented on "Body Worn Camera (BWC) Perception Study – Research Gap Analysis,"
  - Discussion on the benefits of body worn cameras and the causes for discrepancies between body worn camera video, human perception, and other video sources.
  - Dr. Makin asked for feedback from public safety to help identify gaps in and prioritize its research.
- Working with DHS S&T on a NPSTC Town Hall presentation of the VQIPS *Policy Considerations for Video System* Use report.

Radio Programming Compatibility Requirements (Radio PCR) Working Group

Dan Robinson, Chair

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Radio Programming Compatibility Requirements (Radio PCR) Working Group

- PAM Tool Version 7 has been finalized and will be announced as available within the next 30 days.
  - Revised information tab with enhanced instructions.
  - Corrections and edits to various data fields following a comprehensive QA analysis.
  - Compliant with the current version of the National Interoperability Field Operations Guide (NIFOG).
- This Working Group will be shifting from the Technology and Broadband Committee to the Interoperability Committee effective January 1, 2019.

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Spectrum Management Committee

Don Root, Chair

Charlie Sasser, Vice Chair

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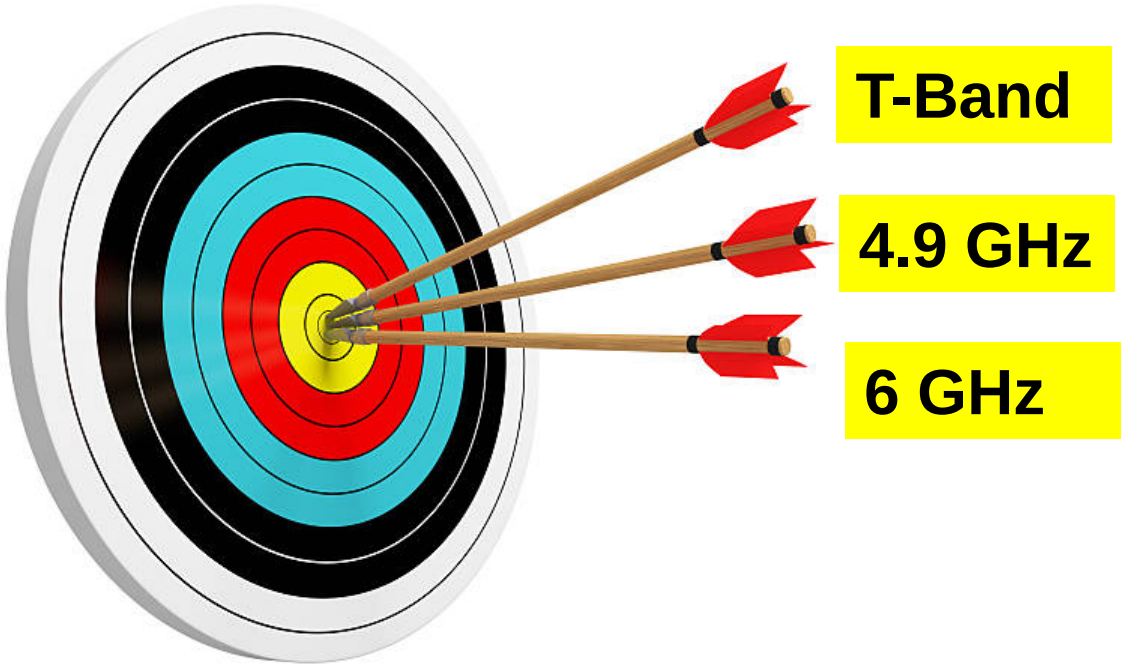
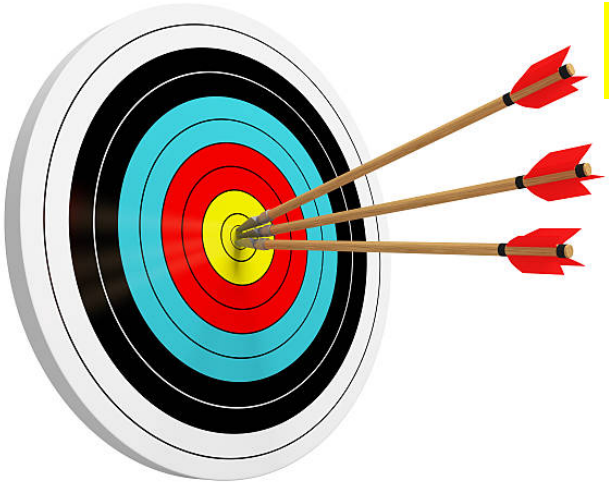
Committee Issue Update

- T-Band – Don Root
- 4.9 GHz – Don Root
- 6 GHz – Don Root
- 9-1-1 Z Axis Location – Marilyn Ward
- NPSTC Regulatory Filings – Charlie Sasser

Public Safety Spectrum is Being Targeted



T-Band

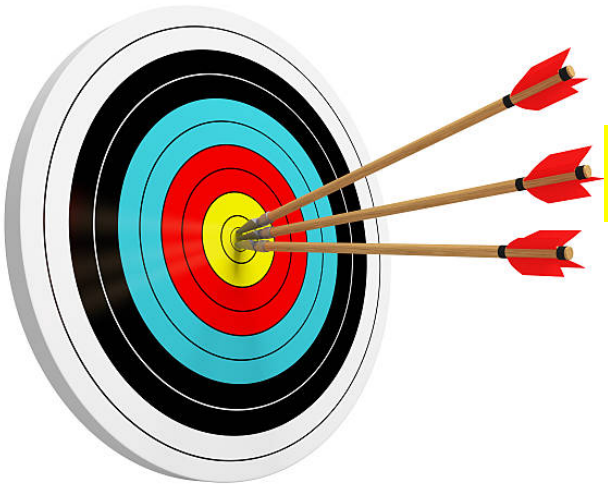


T-Band

T-Band (470-512 MHz) spectrum is allocated for public safety and industrial/business use in 11 top urban areas.

- Section 6103 of P.L 112-96 requires FCC to begin auctioning public safety T-Band spectrum by February 2021 and clear public safety within 2 years of auction close.
- In December 2017, NPSTC formed T-Band Coalition.
- As a result of Coalition actions, H.R. 5085 was introduced February 2018 and S.3347 was introduced August 2018 to repeal Section 6103
- Status: As of 8/27/2018, H.R. 5085 has 19 co-sponsors in the House; S. 3347 has 4 co-sponsors in the Senate

4.9 GHz



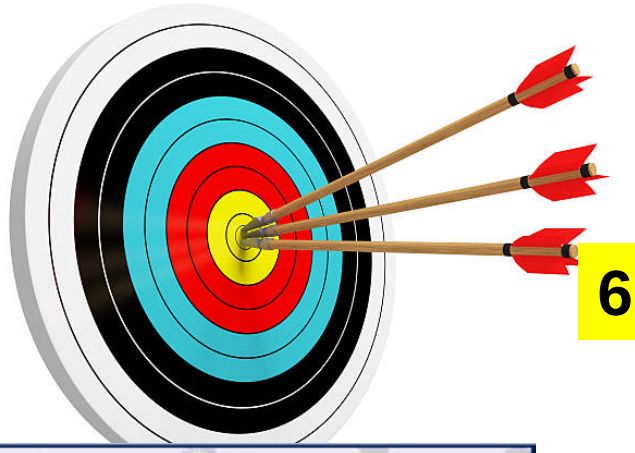
4.9 GHz Band

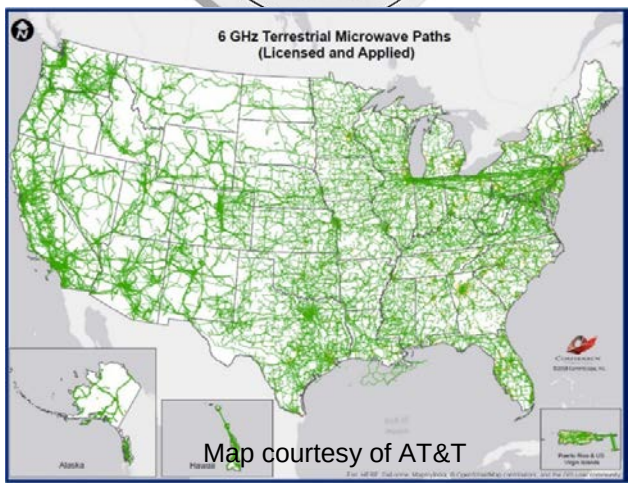
4.94 GHz

4.99 GHz

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

6 GHz





- Public safety, CII and commercial users share the 6 GHz band
- The band is heavily used for fixed microwave links.
- Tech companies are promoting sharing the band for unlicensed WiFi.
  .
- NPSTC set forth need to protect public safety operations.
- FCC Chairman advised plans for NPRM on band sharing for this fall.
- FCC must report on proposals to Congress by November 2 per Spectrum Pipeline Act.
- NPSTC Comments on Pipeline Act Report PN are planned for filing due to FCC Sept. 11, 2018.

9-1-1 Z Axis Location

- CTIA and wireless carriers recommend Z-axis floor level accuracy of +/- 5 meters, i.e., a total variation of 10 meters (approx. 32 feet) or 3 floors.
- Propose that NPSTC recommend +/- 1.5 meters, i.e., a total variation of 3 meters (approx.10 feet) or 1 floor.
- Should we do a position statement now, wait for FCC to request comments, or do both?

NPSTC Regulatory Filings for 2018

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

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Federal Partners Update (*Continued*)

Federal Communications Commission (FCC)

Michael Wilhelm, Chief, Policy and Licensing Division

Charles Cooper, Field Director

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Interoperability Committee

John Lenihan, Chair

Jason Matthews, Vice Chair

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Common Channel Naming Working Group

Don Root, Chair

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Common Channel Naming Working Group

- Finalizing report on how MCPTT will support nationwide voice interoperability.
- Key Findings include:
  - Interoperability will continue to be managed by local, regional and state public safety entities.
  - Common interoperability talkgroups will not likely exist on a national basis (e.g. there will be no MCPTT equivalent of 8CALL90, VCALL10, etc.).
  - Local, regional and statewide managed MCPTT interoperability talkgroups must be made available to itinerant first responders who have traveled outside their service area geography.

Common Channel Naming Working Group

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

Common Channel Naming Working Group

- Report should be ready for review by the full Interoperability Committee in October.
- Final report should be reach the Governing Board for approval in November.

Emergency Medical Services (EMS) Working Group

Paul Patrick, Chair

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EMS Working Group

- Continuing to review broadband data requirements of advanced imaging mobile units, including vehicular stroke assessment vehicles.
- Initiated a quarterly EMS media review round table in which the working group discusses news articles and announcements impacting EMS and technology.
- Completed report "*Prehospital Notification in Time Sensitive Medical Emergencies*", outlining the need for a comprehensive technology and procedure review by EMS agencies.

ACTION NEEDED: Governing Board approval of report.

Cross Border Working Group

Steve Mallory, Chair

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Cross Border Working Group

- Continuing to receive updates from DHS OEC on border issues.
- Continuing to receive updates from the FCC on cross border spectrum issues:
  - 700 MHz Air to Ground assignments and rules
  - New VHF frequencies to support cross border activity
- Completed "*Cross Border 9-1-1 Data Sharing Report*" detailing best practices for managing cross border emergency calls.

ACTION NEEDED: Governing Board approval of report.

NPSTC

Thank you for attending the NPSTC Governing Board Meeting

Next Governing Board Meeting

Thursday, January 10, 2019 *via teleconference*

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NPSTC

Adjourn

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