



# Public Safety Communications & Spectrum

## Spectrum 20/20

April 21, 2010

Ottawa, Ontario, Canada

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

# NPSTC Mission Statement

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# NPSTC Member Organizations



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## **Member Organizations:**

- American Association of State Highway and Transportation Officials
- American Radio Relay League
- Association of Fish and Wildlife Agencies
- Association of Public-Safety Communications Officials – International
- Forestry Conservation Communications Association
- International Association of Chiefs of Police
- International Association of Emergency Managers
- International Association of Fire Chiefs
- International Municipal Signal Association
- National Association of State Chief Information Officers
- National Association of State Emergency Medical Services Officials
- National Association of State Foresters
- National Association of State Telecommunications Directors
- National Emergency Number Association
- National Sheriffs' Association

## **Associate Members:**

- Canadian Interoperability Technology Interest Group
- Telecommunications Industry Association

## **Liaison Organizations:**

- Federal Communications Commission
- Federal Emergency Management Agency
- Federal Partnership for Interoperable Communications
- National Telecommunications and Information Administration
- Office of Emergency Communications
- Office of Interoperability & Compatibility
- SAFECOM
- U.S. Department of Interior
- Department of Justice
  - NIJ COMMTECH

# How is NPSTC organized?

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## **NPSTC Governing Board**

- Representatives from each of its member organizations

## **Executive Committee**

- The Executive Committee comprises a Chair, Vice Chair, and the four Committee Chairs and Vice-Chairs

## **Four Operational Committees**

- Interoperability Committee
- Outreach Committee
- Spectrum Management Committee
- Technology Committee

# Our Goals

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- **Create vision** for the future of public safety communications
- **Develop common policy** perspectives through collaborative forums of leadership in public safety
- **Educate** appropriate governmental bodies regarding public safety communications issues, policies and priorities
- **Educate** public safety practitioners and leaders on communications issues
- **Influence** future technologies, providers and standard making bodies to ensure public safety interests are appropriately represented
- **Advocate** the interests of public safety communications
- **Facilitate** coordination, dispute resolution and the exchange of effective practices, tools and information



# Major Issues

## 1. Broadband

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# The Proposed Nationwide Public Safety Wireless Broadband Network

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- Public safety never had any spectrum assigned for wide area robust data communications until the allocation of spectrum at 700 MHz.
- Building a new nationwide Public Safety Wireless Broadband Network presents an opportunity to bring commercial technologies to the public safety community that will allow access to much needed and reliable wireless data services.

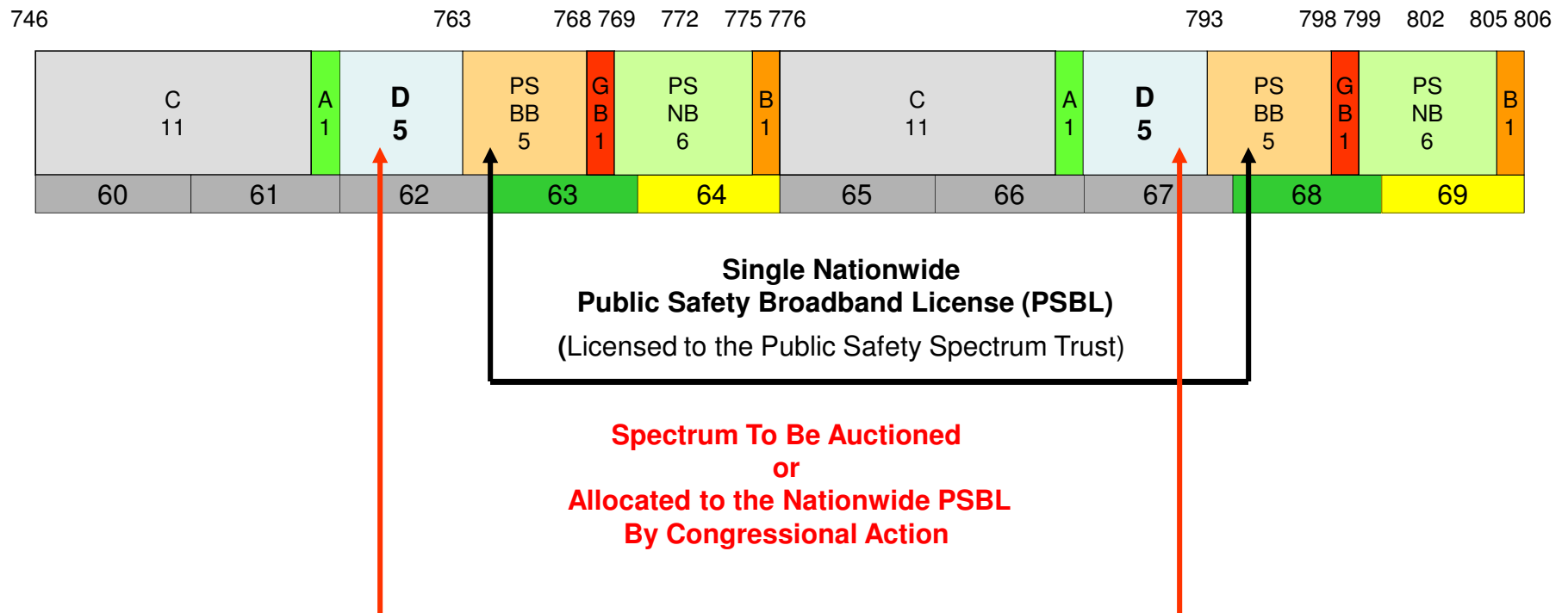
# The Vision of Public Safety



- Commercial investment and government funding to build out and maintain the infrastructure
- Public/Private Partnership(s) that will facilitate building a nationwide shared wireless broadband network
- Network reliability & security greater than currently provided by commercial carriers
- Public safety access to the latest commercial technologies
- Priority access for public safety
- Coverage greater than currently provided by commercial carriers
- A satellite component that will provide coverage when terrestrial service is disrupted or not available
- Additional 5 MHz of spectrum proposed to be auctioned

## New Upper 700 MHz Band Plan - Adopted by FCC on July 31, 2007

← Base Transmit (Downlink) → ← Mobile Transmit (Uplink) →



# Technology / Interoperability



- NPSTC/PSST chose LTE technology for broadband
- Several local jurisdictions have expressed interest in early build outs, adding to the challenge of nationwide interoperability
- NPSTC developed minimal operational standards for interoperability to permit localized building in the near future
- FCC is now deciding on action to take for the early deployment requests
- Rural areas remain a major issue for coverage

# FCC Proposal



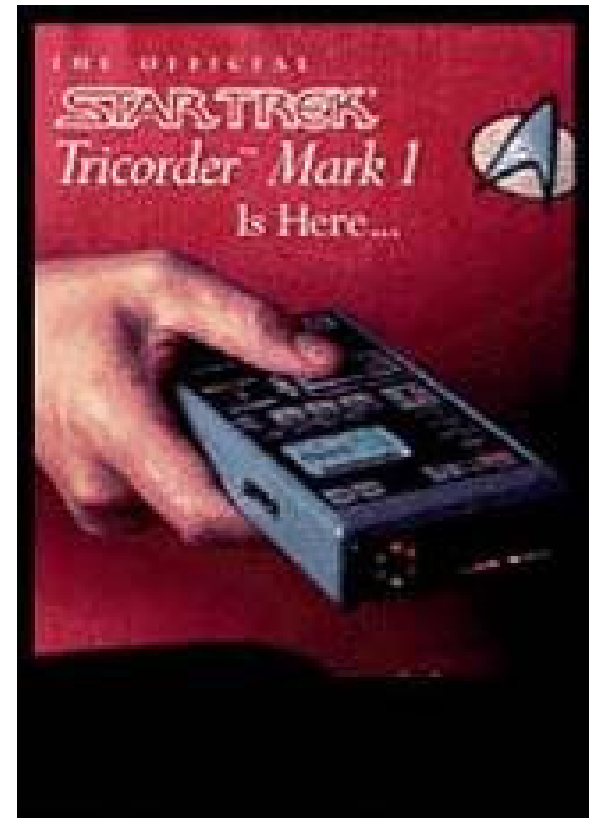
- FCC has proposed auctioning D-Block with no specific public safety requirements
- FCC suggests partnering with any 700 MHz commercial provider to augment public safety's five megahertz. This presents significant technical challenges, as only the D-Block is adjacent in frequency to public safety's spectrum. Handsets cannot span the entire 700 MHz band.
- FCC recommends significant funding by Congress
- FCC has proposed a federal management structure within FCC to manage public safety broadband spectrum (Emergency Response and Interoperability Center "ERIC")

# Current Status



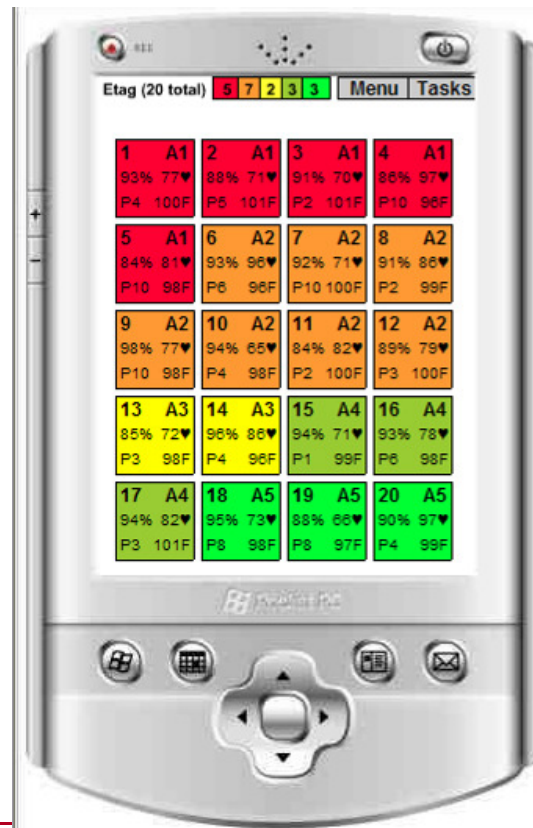
- Public safety needs a nationwide wireless broadband network that provides access to modern technologies. The network needs to be robust, be interoperable, allow nationwide roaming, and be more reliable and secure than current commercial networks.
- With the FCC's current position regarding the D-Block, representatives of the Public Safety Spectrum Trust and the major national public safety organizations are engaged in intense discussions with federal regulators to make sure that the outcome is positive for public safety.

- Uses Beyond Police/Fire
  - Stand Off VS Monitoring
  - IR Crowd Disease Detection
  - Portable CT (Images)



- Other Predicted Technologies

- Medical Quality & Other Video (esp. Comm. Para.)
- Multi-Vital Signs Transmission
- Multiple Patient Monitoring (MCI)
- Multiple Responder VS Monitoring



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## Major Issues

### 2. Future Spectrum Needs

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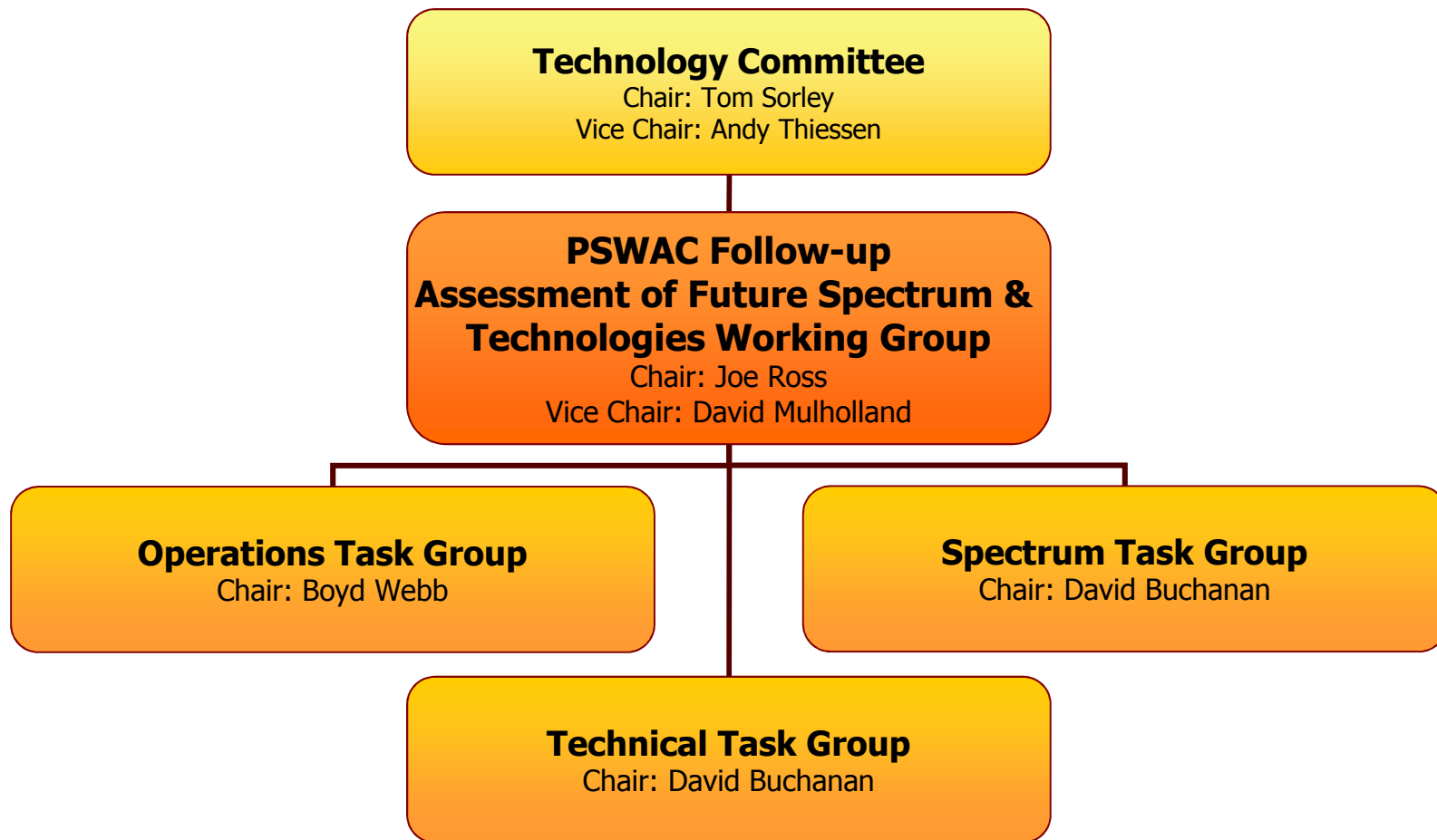
# Working Group to Assess Spectrum Needs

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- NPSTC created a Working Group to update the Public Safety Wireless Advisory Committee (PSWAC) Report of 1996 by identifying the public safety user communications requirements for the next 10 years (2010-2020)

# Organization Chart



# Goals

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- Identify the public safety user communications requirements for the next 10 years (2010 - 2020)
- Identify impacts on technology and wireless spectrum needs in order to meet those user needs
- Deliver a final report by the end of 2010 that identifies those spectrum and technology needs to help drive
  - Policy (spectrum, funding, and other)
  - Standards that require development
  - Focus the vendor community to meet the long-term needs

# Task Groups

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- **Operations Task Group**
  - Develop user needs questionnaire to solicit expected public safety communications needs for the next 10 years.
  - Publish user needs questionnaire results.
- **Technical Task Group**
  - Assess current technology.
  - Investigate technologies available over the 2010 – 2020 timeframe.
  - Identify future standards development.
- **Spectrum Task Group**
  - Assess current spectrum usage.
  - Update spectrum needs models.
  - Identify spectrum requirements and potential solutions to meeting public safety spectrum needs.
- **All groups to integrate transition and interoperability needs in to their findings**

# Public Safety Input Needed

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- Final report must accurately reflect the spectrum and communications technology needs of public safety
- Three ways to participate
  - Volunteer to directly contribute in the working group
  - Respond to the upcoming questionnaire
  - Send input to [AFSTInput@npstc.org](mailto:AFSTInput@npstc.org)
- Need broad input and expertise
  - From each public safety discipline (law enforcement, fire, EMS, transportation, health, etc.)
  - Representing diverse geographies (rural, urban, suburban, state, etc.)



## Major Issues

### 3. Interoperability / Narrow Banding

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# Interoperability Issues

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- Common nomenclature for interoperability channels (soon an ANSI standard)
- Cross border licensing and interoperability issues with Canada (working with CITIG). VHF and UHF interoperability channels are not common across the border
- Plain language dispatch

# Interoperability Issues

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- Narrowbanding at VHF and UHF
  - Improved spectrum efficiency
  - Transition to 12.5 kHz efficiency equipment by 1/1/2013
  - Interim interoperability issues between old 25.0 kHz equipment and new 12.5 kHz equipment
- Narrowbanding by conversion from wideband analog to narrowband digital in border area requires Canadian coordination and approval. Stations that have been on the air for years are being denied.

# Questions?