



# NPSTC Broadband Requirements

**Andrew Thiessen**  
**Technology Committee Vice Chair**  
**Broadband Working Group Chair**

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# Presentation Materials

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- All presentations can be downloaded from <http://pscr.gov/agenda.php>
- Send questions and/or comments at any time during the meeting to [700mhz@its.bldrdoc.gov](mailto:700mhz@its.bldrdoc.gov)

# NPSTC Broadband Working Group Recap

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The NPSTC Broadband Working Group has been active in development user requirements from the beginning of the 700MHz broadband process for public safety:

- In November 2007, NPSTC published the first version (0.6) of the 700MHz Broadband Public Safety Statement of Requirements
  - At the time, the D block auction had not occurred
  - Public safety had not selected a technology
- In August of 2009. NPSTC published the Broadband Task Force Report detailing a first cut at interoperability requirements given LTE as the technology of choice
  - Waivers had not yet been granted to PS organizations
  - Roaming amongst potentially separate PS LTE networks was not heavily considered

# NPSTC Broadband Working Group Recap cont' d

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- In fall 2010, work began on creating a high-level, functional definition of mission critical voice
  - Published in August 2011
  - Currently being used in standards development for 3GPP
- In 2011, five task groups are created to tackle updating the 700MHz Statement of Requirements in piecemeal fashion
  - Local Control
  - Priority & QoS
  - Multimedia Emergency Services
  - Voice
  - Security
- In March 2012, a planning meeting will be held to analyze existing work efforts, align, and plan next Task Group creation



# NPSTC Broadband Working Group Local Control Task Group

## Status

2012-02-17

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# Primary Deliverable

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- *Local Control in the Public Safety Broadband Network: Issues and Use Cases*
  - Document number LC21 – Rev E, Dated February 2012.
  - Forwarded to advisory committee for second review
  - This version incorporates changes in response to comments from Chief Aiken.
- See outline next page
- Discussion is on-going with regard to potential next steps.
  - Original plan was for the development of illustrative use cases
  - Discussion as to whether it makes sense to put the group on temporary hiatus while Security, QOS and Emergency Services groups produce their first deliverables.

## Generally...

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- LC21 attempts to capture the needs of the “local entities” to control and/or monitor an/or be informed about various aspects of the BBN.
- Should help to bound and/or define the relationship between public safety organizations and a hypothetical “Broadband Network Operator”.

# Outline of LC21

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- Introduction – Including scope, assumptions, areas for further analysis
- “Requirements identified by the participants”
  - User and Device Management – Including both subscription management concerns and device management concerns
  - Network Design – Including cell site selection and hardening, “local” influence on network topology, Reuse of user entity IP network infrastructure, backhaul design.
  - Network Operations and Maintenance – including local requirements for visibility into network status, sensitivity to planned outages, real-time support needs, and physical asset control
  - Applications and Services – including locally hosted applications, nationwide and regional applications, and security and information assurance concerns.



**Thanks.**

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# NPSTC Broadband Working Group:

## Priority and Quality of Service Task Group

**Task Group Status**  
**3/7/2012**



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# Priority and QoS Task Group Members



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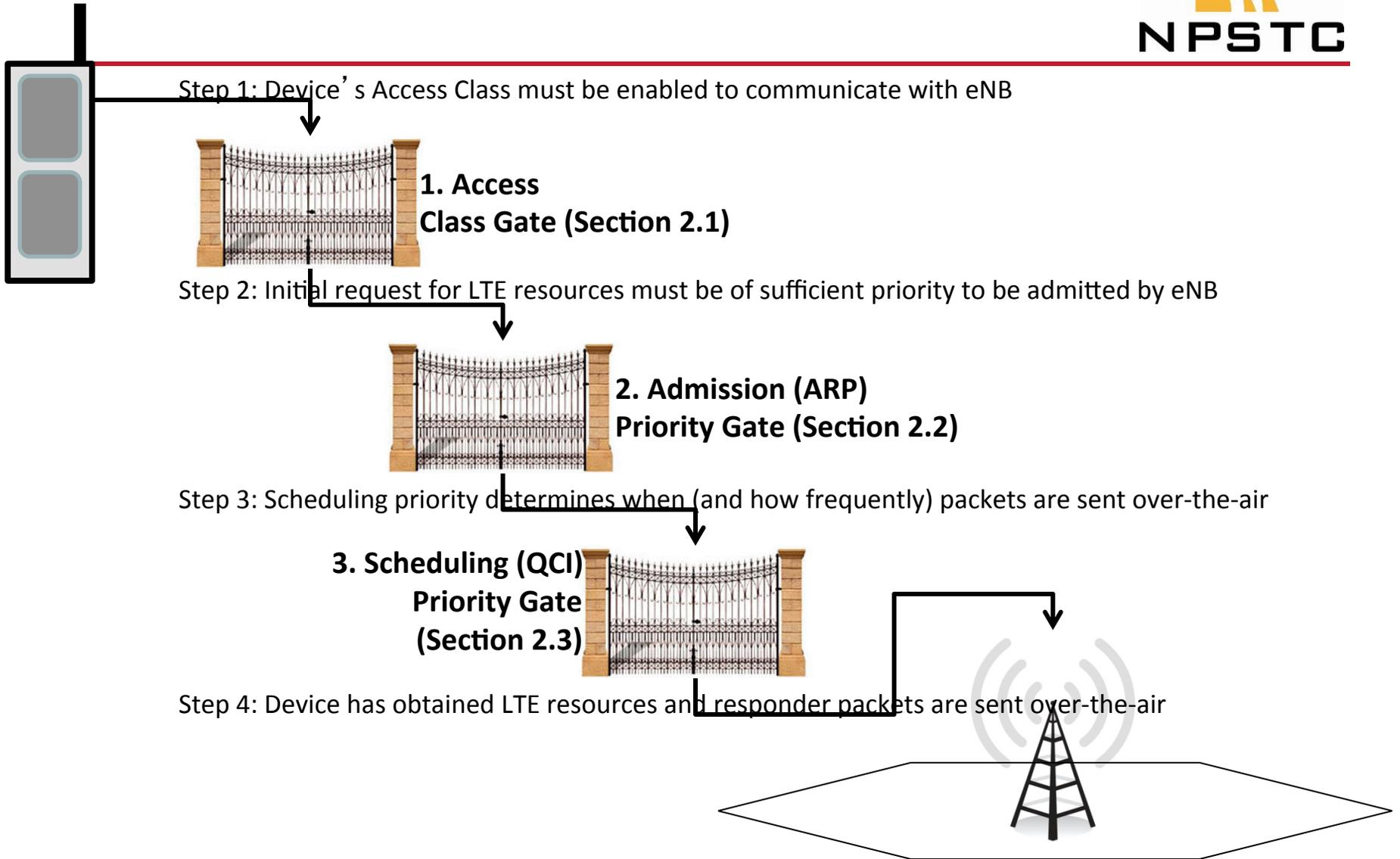
# Latest Accomplishments

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- ✓ 2/1/2012 Nationwide Priority and QoS Survey concluded
  - Inputs evaluated and analyzed
  - Results captured in P&QoS definition document
  
- ✓ 2/29/2012 Priority and QoS Definition Document
  - Needs/use cases for nationwide framework captured
  - Evaluating additional use cases
  - In-scope: all aspects of prioritization of PS BBN and transport priority, pre-emption
  - Out-of-scope: roaming to carriers, applications, implementation
  - Document released for review

# LTE Prioritization “Gates”



# Admission Priority (Gate 2)



## Static Priority

- Computed by LTE system automatically (no human intervention required)
- Normal day-to-day use

## Dynamic Priority

- Ability to override default priority in the event of special circumstances
- Dynamic priority should be triggered automatically by public safety applications; Users don't want to be distracted by directly controlling LTE parameters themselves

### Your Static Priority is a function of:

- Application Type
- Responder Function
- Home vs. Itinerant Location

### Ways to override Static Priority:

- Responder Emergency (e.g. Emergency Button)
- Immediate Peril (new end-user control)
- Use of the Incident Command System
- Itinerant Users – Incident Assigned

# Highlights of National Priority & QoS Framework Needs

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1. Applies to all PSBBN eNBs, regardless of opt-in/opt-out
2. Ability for local agencies to immediately engage dynamic priority – situational QoS, subject to priority values defined in framework (no calling 1-800-PRIORITY)
3. Responder Emergency (e.g. emergency button)
  - a. Should receive top priority on network
  - b. Can pre-empt other services for resources
  - c. Can be controlled by agency as to who can use service
4. By default, the system prioritizes applications this way (examples):
  - a. Mission Critical Voice
  - b. Data Applications (CAD, Internet/Intranet, DB queries)
  - c. Low Priority Voice (e.g. telephony or back-up PTT)
  - d. Video or Multimedia (streaming, progressive, etc.)
  - e. File Transfers, Device Management
5. Do not distract public safety with complicated LTE controls during the mission – priority changes should be “built in” to the normal workflow (e.g. ICS role assignments).



**Thank You!**

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# **NPSTC Multimedia Emergency Services (MMES) Working Group**

**Working Group Update  
1/20/2012**

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# Scope of MMES Working Group

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The Public Safety community has a desire to have multimedia emergency services for communication between its command centers and responders using mechanisms that are not primarily voice and that leverage the commercial approaches being developed for NG9-1-1. The MMES working group will address the following examples of non-verbal communications:

- Text communication
- Multi-media (e.g., pictures, video clips) communications.
- Real-time video communications
- Text communication with supplementary media (such as background audio and/or video)

# MMES Working Group Members

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Bill Moore (lead) - CITIG  
Frank Korinek - Motorola Solutions  
Brian Daly - AT&T  
Christian Militeau - Intrado  
Gordon Hsu - ALU  
Rich Orsulak - NTIA  
Chris McIntosh - State of VA  
Robert Wilson - WYODOT  
Edgardo Barreto - Puerto Rico Fire Dpt  
Lincoln Unruh - RavnTech Corp  
Patrick Kenealy - MPSCS  
Michael Britt  
Andy Theisen – National Public Safety  
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Jeff Bratcher  
Jackie Bayless - National Public Safety  
Richard Wu – NSN  
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Baruch Altman - LiveU  
Doug Onhaizer - Search  
Bruce Ward  
Alvin Sunahara  
Mike Barney  
Shawn Lefebre - Harris  
Mike Barone  
Trent Miller – Motorola  
Jim Mathis - Motorola

# MMES Working Group Goals

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- Develop use cases to show how these MMES can be utilized to benefit Public Safety.
- Identify and document MMES requirements associated with the use cases that are unique to Public Safety needs.
- Develop a technical report that summarizes the findings of the MMES working group.

# Current Status of MMES WG

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- To-date the MMES working group has documented a number of use cases and associated requirements to show how MMES can be utilized to benefit Public Safety.
- The findings of the MMES working group are being documented in a technical report.
- The MMES working group is looking to complete its work during the 2<sup>nd</sup> Quarter of 2012.



# NPSTC Broadband Working Group: Security Task Group

Task Group Status  
2/17/2012

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# Mission Statement *(DRAFT – in progress)*

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The mission of the *NPSTC BBWG Security Task Group (STG)* is to provide a framework for the identification and analysis of user security requirements with a purpose of forming a holistic security strategy for the deployment and operation of a National Public Safety Broadband Network (NPSBN). The user and functional requirements produced will assist NPSTC and its Public Safety partners in forming the basis of knowledge necessary to produce a certification process assuring the operational effectiveness and mission-critical nature of the NPSBN.

There are 64 members of the BBWG STG  
from Public Safety, Industry, Government, and Academia

# March BBWG STG Working Group Meeting – Washington DC (2/15)



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33 Participants

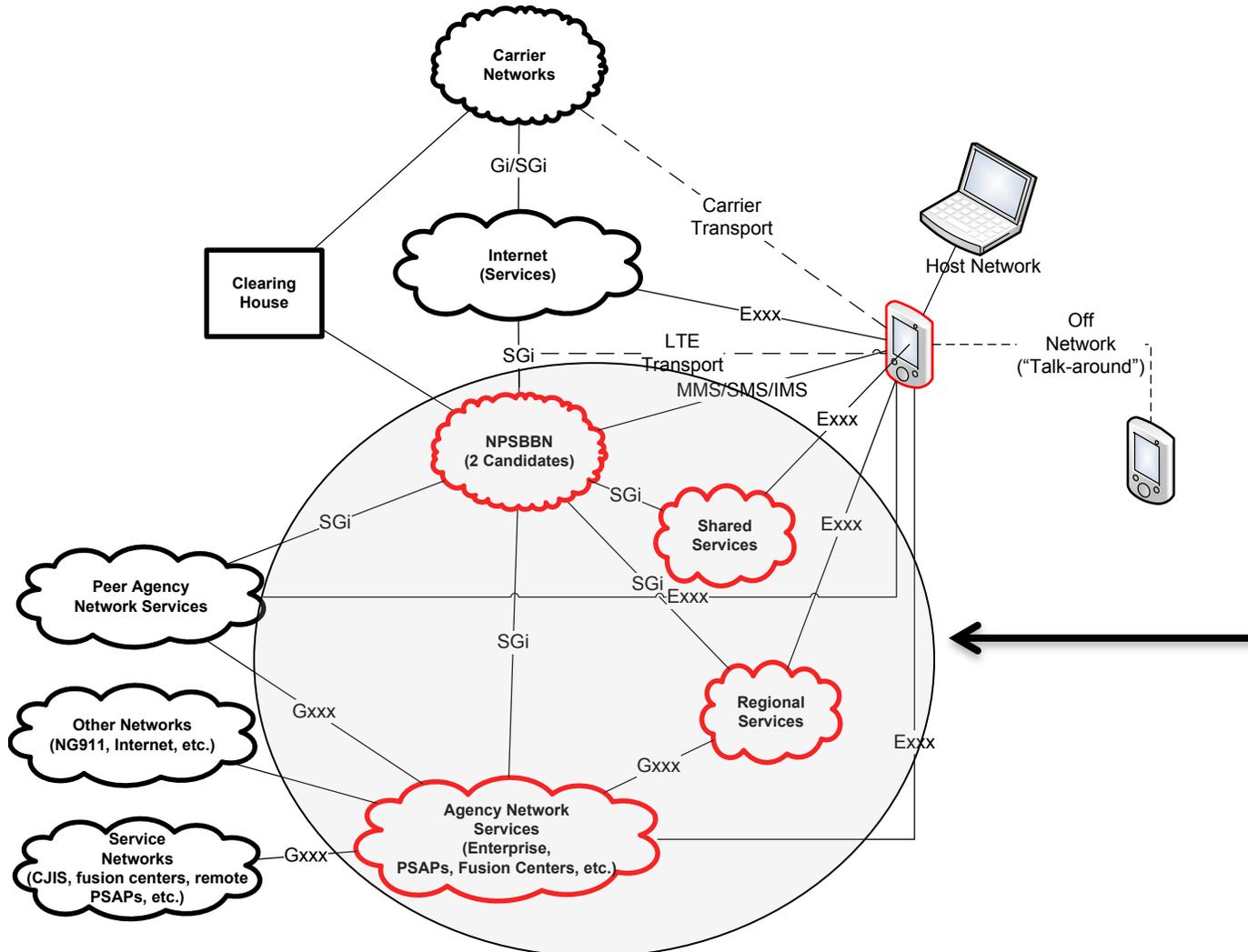
Two Major Group

- Mission Requirements

- Functional/Technical Requirements

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# Task Group Scope



**BBWG SWG**

Defining the Scope of the Security:

- LTE Network (RAN, CORE, Operations Support)
- Shared Services
- Regional Services
- Agency Network Service (connected to NPSBN)

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# Status

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- Group has been operating for about 5 months with a focus on:
  - Identifying Public Safety participants
  - Educating and Identifying group scope
  - Understanding impact of LTE and other component on Security architecture
  - Identifying existing Government, Industry, and Standards impacting security (reuse)
  - DRAFT : User Requirements (Mission) Identified (2/1/2012)
- February 15, 2012 – Face-to-Face Meeting –
  - **Target Deliverable** : mid-year DRAFT document delivered to NPSTC for review, modification, and approval
  - **User Requirements (Use Case) Committee** – Identified process for providing a “BASE” set of User Requirements in the form of Use Cases
  - **Functional Requirements** – Team identified commercial sources for NGN security requirements, and brainstormed on differences between commercial requirements and Public Safety Requirements

## Other Security Sources being explored

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- FCC ERIC “PSAC: Considerations and Recommendations for Security and Authentication” (Subcommittee Report) - 5/11
- “Criminal Justice Information Service (CJIS) Security Policy” (version 5.0) – 1/11
- ITU-T Y.2701 – “Security Requirements for NGN” release 1 – 4/07
- ITU-T X.805 – “Data Networks and Open Systems Communications” - 10/03

# Task Group Deliverables and Status



Deliverable	Forecast	Actual
Face-to-Face Group Planning Meeting	2/15/2012	Accomplished
Sample "BASE" Use Case Model (Mission Scenario)	3/1/2012	
Additional Use Cases Developed (Mission & Operational Scenarios)	4/1/2012	
Functional Requirements Draft	5/1/2012	



# NPSTC Broadband Working Group

## Recap of March 5 Meeting

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## NPSTC Broadband WG Meeting Purpose

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- To discuss whether the NPSTC BBWG should re-write the NPSTC Broadband Task Force Report as a potential submission to the FCC's Interoperability Board
  - Dave Buchanan and Andy Thiessen to develop quick plan of action (Friday)
- To discuss options for rewriting the 700MHz Statement of Requirements (SoR), including rolling in work from existing NPSTC BBWG task groups

# Revamping the SoR

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## Timeline & Approach

- Discuss FirstNet Timeline
  - Board to be created in 180 days OR LESS
- Review 2007 SoR Approach
  - Similar approach for this revision
- Writing Teams

# Statement of Requirements Structure

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- Structure
  - Glossary (Stu Overby and Andy Thiessen)
  - Executive Summary (Don Denning and team)
    - » Priorities
    - » Processes
    - » Objectives
    - » Organization
  - Reference Models (Tom Hengeveld and team)
    - » Reference Architecture
      - » Will help to constrain the requirements
    - » User models
      - » Will help to focus requirements on the user population

# Statement of Requirements Structure Cont' d



- Structure

- User Requirements (Tom Hengeveld and team)
  - » From the end users perspective, what must this network do and what requirements are needed for support
    - » Applications and Services
    - » Devices
    - » Security
    - » Etc.
- Administrative Requirements (David Warner and team)
  - » From a local/State/Federal agency perspective, what do they require organizationally from FirstNet
    - » Service level agreements
    - » Policies
    - » Certification of devices
    - » Etc.

# Statement of Requirements Timeline

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- Timeline
  - End of March
    - » Each team returns with fleshed out TOC
    - » Glossary written
    - » Document template created
  - End of April
    - » Writing teams create 1<sup>st</sup> drafts, vet Face to Face
      - » Executive Summary
      - » Reference Models
      - » Administrative Requirements

# Statement of Requirements Timeline (Cont'd)



- Timeline
  - Late May/Early June
    - » 2<sup>nd</sup> draft written, vet Face to Face
    - » User requirements section kicks off
  - Mid July
    - » Final drafts submitted
      - » Editorial review led by Stu Overby
  - Late July
    - » SOR submitted to NPSTC GB for review/approval
  - August 22<sup>nd</sup>
    - » NPSTC submits SOR to FirstNet for consideration