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FirstNetTM



FirstNet Quality of Service Priority and Preemption Framework

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Network Status

Three Network States



Static



Dynamic



Controlled



Covered Leasing Agreement Users

Three CLA User States



Free Range



Restricted



Preempted



Emergency/Non-Emergency User States



Immediate Peril



NPSTC U7

Responder Emergency



NPSTC U6

Relayed Users



Primary User Type

NPSTC U1

- Type of User: Discipline, Priority, Network Access, Network Admission, Scheduling Priority
- Source: Provisioned Data

User Default Role

NPSTC U3

- Default Leadership or Functional Role
- Source: Provisioned Data

User Location

NPSTC U4

- User Device Relative Location
- Source: Network

User Operational Status

NPSTC U5

- Assigned to an Incident identified by a Unique Incident Identifier or Not Assigned
- Source: API, CAD or App by Public Safety

Incident Role

NPSTC U9

- Incident Role for an Incident Identified by a Unique Incident Identifier or No Role
- Source: API, CAD or App by Public Safety

Incident Identifier

- Unique Incident Identifier used to tie users and incident together
- Source: Network Assigned

Incident Location

- Point Location or Geo-fence location for an Incident
- Source: API, CAD or App by Public Safety

Incident Severity

- The severity of an incident
- Source: API, CAD or App by Public Safety

NPSTC U8

Static Application Data:

Application Profile

NPSTC U2

NPSTC U10



Type

- Major Application Type: Incident Command, Voice, Messaging, 911, Applications, Machine-to-Machine, Video, Responder Safety and Off-Net

Usage Scenario

- One of approximately 40 Predefined usage scenarios

Priority

- Priority Value for the application: High – Medium - Low

Quality

- Quality of Service (delay tolerance) for the Application: High - Medium - Low

Preemption

- Whether the Application can Preempt or be Preempted: Can Preempt - Can Be Preempted

Frequency of Use

- Expected frequency of use for the Application: Usage per Hour

Expected Bandwidth

- Expected or required bandwidth for the Application: in Kilobits per second

Source: At time of Agency onboarding to FirstNet, Agency accepts Default Values or configures their own agency specific data through local control.

Static Application Data: Operational Profile – ~10 Profiles per Agency



Operational Profile 1: “In Station”

- Type - Usage Scenario A – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario B – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario C – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario D – Priority – Quality – Preemption – Frequency - Bandwidth

Operational Profile 2: “Single Family Structure Fire”

- Type - Usage Scenario A – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario E – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario R – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario T – Priority – Quality – Preemption – Frequency - Bandwidth

Operational Profile 10: “Wildland Fire”

- Type - Usage Scenario U – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario X – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario Y – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario Z – Priority – Quality – Preemption – Frequency - Bandwidth

Responder Emergency

- Type - Usage Scenario U – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario X – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario Y – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario Z – Priority – Quality – Preemption – Frequency - Bandwidth

Immediate Peril

- Type - Usage Scenario U – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario X – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario Y – Priority – Quality – Preemption – Frequency - Bandwidth
- Type - Usage Scenario Z – Priority – Quality – Preemption – Frequency - Bandwidth

Source: At time of Agency onboarding to FirstNet, Agency accepts Default Values or configures their own agency specific data through local control

Operational Profile 2: “Single Family Structure Fire”

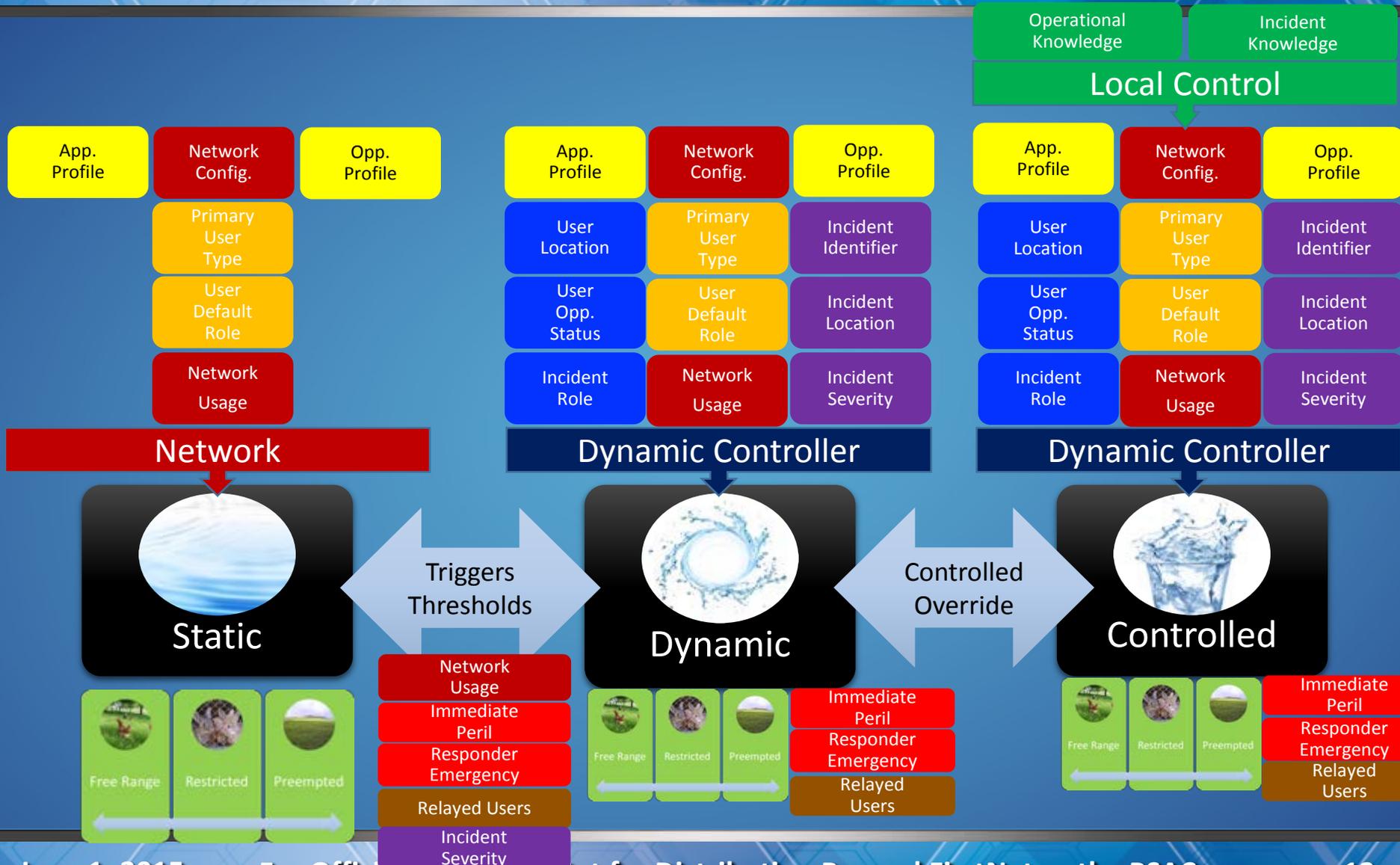
- Type: Application – **Computer Aided Dispatch** – Priority High – Preemption High – Quality Medium – Frequency 5XHour – BW 64Kbps
- Type: Application – **Paging/Alerting** – Priority High – Preemption High – Quality Medium – Frequency 5XHour – BW 64Kbps
- Type: Application – **Situational Awareness** – Priority High – Preemption High – Quality High – Frequency Continuous – BW 10 Kbps
- Type: Application – **Basic Internet** – Priority Low – Preemption Vulnerable – Quality Low – Frequency 5XHour – BW 128Kbps
- Type: Responder Safety – **Human Telemetry** – Priority High – Preemption Can – Quality High – Frequency Continuous – BW 4Kbps
- Type: Application – **Fire Related** – Priority High – Preemption Vulnerable – Quality Medium – Frequency 5XHour – BW 64Kbps

Dynamic Application Data: Profile Selection - Set User X to Profile Y



Source: User default state is Profile 1. When user is assigned to an Incident through API, CAD or Application the users application profile can be set to another profile

QPP Framework



Topics For Future Investigation



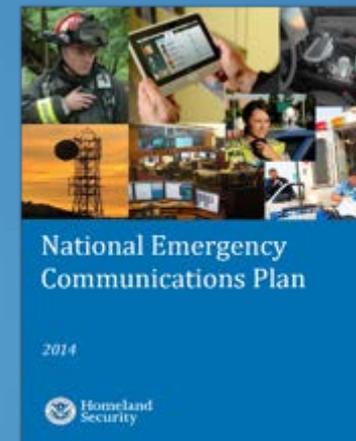
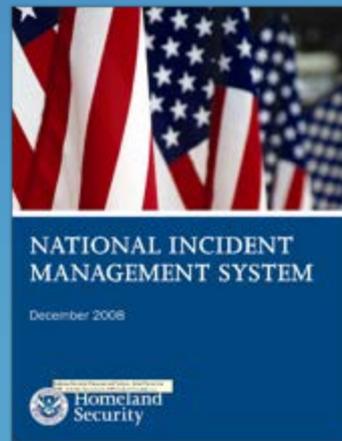
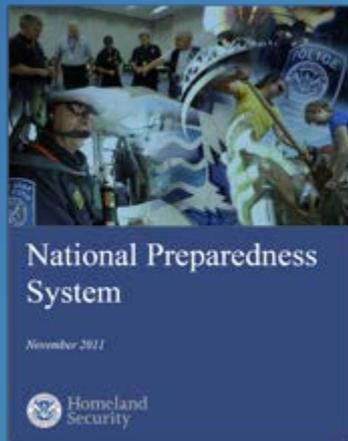
- Groups
- Relayed User Emergency
- QPP treatment of VPN Traffic

Backup Slides: The Need for A Framework



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A Common Framework is Vital



Emergency Management Institute | FEMA

Resource Center Home | Help

ICS Resource Center

Resource Center Contents

- **ICS Review Document**
A summary of key features and principles.
- **ICS Training Courses**
Access to related training materials and independent-study courses.
- **ICS Job Aids**
Printable job aids related to ICS positions and activities.
- **ICS Forms**
Printable versions of standard ICS forms.
- **ICS Position Checklists**
Printable checklists of ICS roles and responsibilities.
- **Glossary of Related Terms**
Alphabetical list of terms and acronyms, with definitions.
- **Reference Documents**
Printable versions of relevant reference documents.
- **Links**
A list of applicable resource documents and web sites.

Communications Unit Training

The Communications Unit (COMU) plays a critical support role within the Incident Command System (ICS). ICS establishes basic principles, practical tools, and a definitive nomenclature and structure for supporting incident-based emergency response.

The Communications Unit Leader (COML) heads the Communications Unit and is responsible for integrating communications and ensuring that operations are supported by communications. The COML must understand ICS and local response systems to support the efforts of incident personnel.

- **Roles & Responsibilities of COMU Personnel**
- **COML Course Development**
- **COML Course Delivery**
- **AuxComm and COMT Courses**
- **Train-the-Trainer Courses**
- **Position Task Books (PTBs)**

Course descriptions, prerequisites and other requirements for these classes are listed separately on this website. **QEC&CTAP approved classes will only be available via a Technical Assistance Request through a state/territory's Statewide Interoperability Coordinator (SWIC).**

More Information...
For all COMU-related questions, please email COMU@hq.dhs.gov.

- **COMU Course & Prerequisite Details**
 - 2012 AuxComm
 - 2012 COML
 - 2012 COMT
 - 2012 COML TIT
 - 2012 COMT TIT
- **Documents & Forms**
 - COML Forms
 - COMU/COMT Position Task Books
 - COML Communications (Released April 24, 2008)
 - COML Mobilization Guide (March 20, 2008)

Priority Framework Concept



The Nationwide Public Safety Broadband Network (NPSBN) intends to enable a new class of communications assets as well as a common network supporting interoperable public safety communications which aligns to the NIMS/ICS/COM-U principles.

Developing a priority and quality of service framework will allow for a system design and policy that meets the day-to-day needs of Public Safety, but is capable of growing with incident severity. It will also likely allow for defining aspects of locally controlling priority access to the network by trained personnel.

Three key areas to be addressed:

- 1. Priority framework (ultimately affects ARP and Access Class)*
- 2. Preemption framework (ultimately affects PVI and PCI)*
- 3. Application framework (ultimately affects QCI and ARP)*

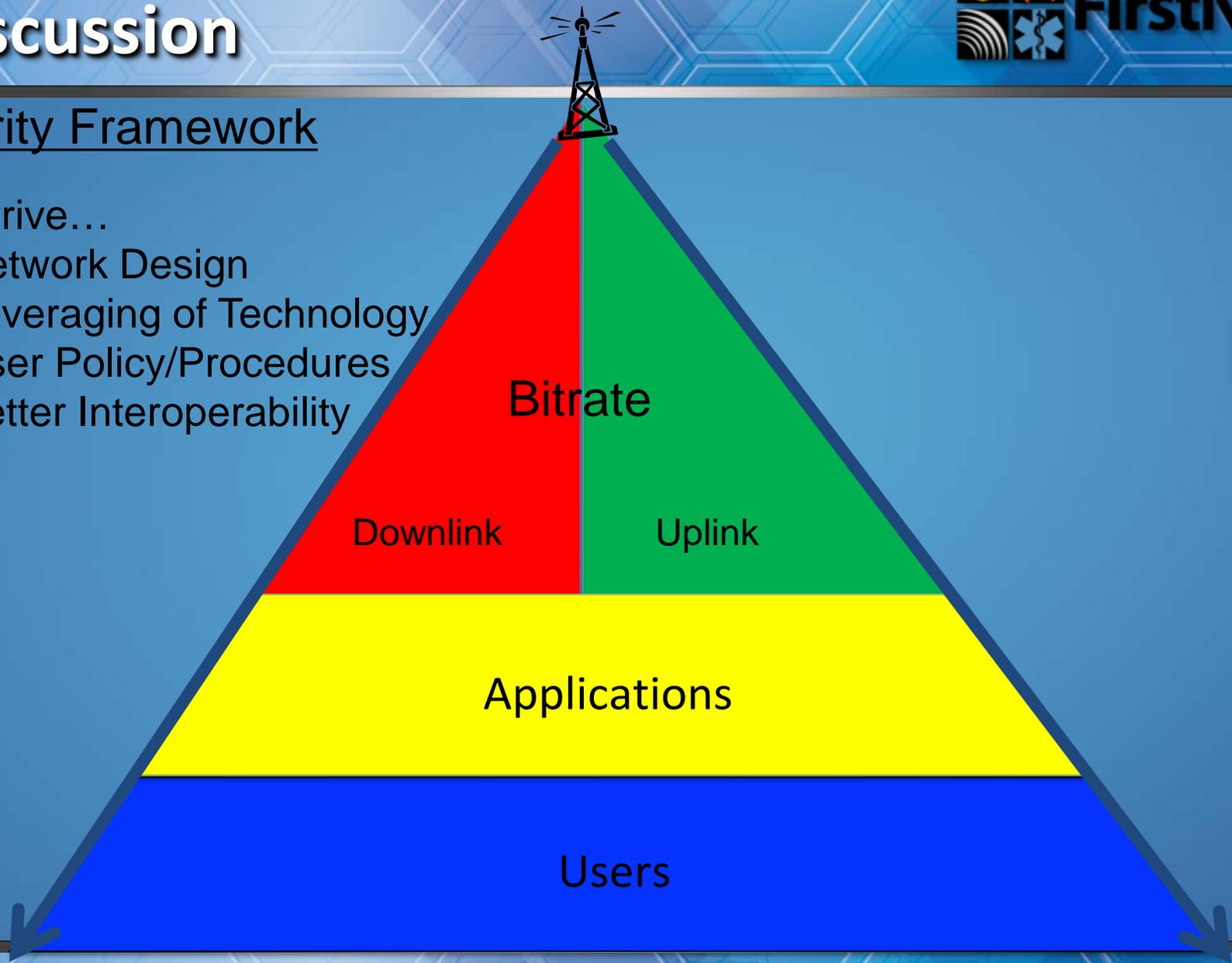
Starting the Framework Discussion



Priority Framework

Will drive...

- Network Design
- Leveraging of Technology
- User Policy/Procedures
- Better Interoperability



Visualizing a Framework

