FirstNet
Dedicated to Public Safety

Creating FirstNet Together:
Why We Need it and What it Will Take

Sue Swenson
FirstNet Board Member

Competitive Carriers Global Expo
April 17th, 2013
New Orleans, Marriott
Why FirstNet?
Walls between emergency responders take their toll.
Agencies have been “walled-off” from each other – denying force-multiplier effectiveness.

- Spectrum fragmentation
- No single standard for systems and devices
- Interoperability differences across jurisdictions and disciplines
Public safety has been “walled-off” from leveraging wireless technology advancements.

Enhancing Public Safety’s Capabilities Requires Greater Data Speeds and Bandwidth

<table>
<thead>
<tr>
<th>Broadband Speeds</th>
<th>Data Transfer Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Kb/s</td>
<td>Uploading Video of a Patient</td>
</tr>
<tr>
<td>200 Kb/s</td>
<td>Uploading Video of a Patient</td>
</tr>
<tr>
<td>500 Kb/s</td>
<td>Downloading Building Records</td>
</tr>
<tr>
<td>1.0 Mb/s</td>
<td>Downloading Geo Info System Data</td>
</tr>
<tr>
<td>1.5 Mb/s</td>
<td>Downloading Building Records</td>
</tr>
<tr>
<td>2.0 Mb/s</td>
<td>Uploading Data License Plate Reader</td>
</tr>
<tr>
<td>2.5 Mb/s</td>
<td>Downloading Photos</td>
</tr>
<tr>
<td>3.0 Mb/s</td>
<td>Average LMR Data Rate</td>
</tr>
<tr>
<td>3.5 Mb/s</td>
<td>Cellular Voice</td>
</tr>
<tr>
<td>4.0 Mb/s</td>
<td>Cellular Voice</td>
</tr>
</tbody>
</table>

Source: GAO Analysis
Public safety has been “walled-off” from capturing device and infrastructure cost savings.

**Economies of Scale Advantage**

- **Increased Device Capabilities, Lower Costs**
- **Increased Infrastructure Capabilities, Lower Costs**
- **Increased Reliability (Hardening, Redundancy) at Lower Costs**
- **Lowering Operating and Upgrade Costs**

**Public Safety Users**
- U.S. Only
- 2 million users in 2010
- >10,000 Uniquely Managed Networks
- Avg 200 Users Per Network
- Cost per User = >20x of Avg Carrier User*

**Commercial Cellular Users**
- U.S. Only
- 300 million Users in 2010
- 4 Uniquely Managed Networks
- Avg 75M Users Per Network
- Cost per User = fraction of Public Safety Users*

Public safety needs it, demanded it and worked to get it: it’s time for the walls to come down....
“We must all hang together, or assuredly we shall all hang separately.”

Ben Franklin
At the signing of the Declaration of Independence
FirstNet will be a force multiplier, enabling collaboration to help save more lives, protect property and solve crimes faster.

Jeffrey D. Johnson, Chief (Ret.)
Chief Executive Officer
Western Fire Chiefs Association
FirstNet Board Member
FirstNet: A Dedicated Public Safety Network

Nationwide Connectivity
Terrestrial, Deployables, Satellite

Public Safety Effectiveness
Priority Access; Force Multiplier

Public Safety Applications
4G Data, PTT, Web, Video, Mission Critical Voice (future)

Public Safety Grade
Reliable: Hardened, Redundant
Perceptions and Reality

Perception

- Public safety may have to give up autonomy and control
- Public safety currently manages devices, users and talk groups
- Public safety is comfortable using commercial 3G/LTE networks
- FirstNet will cost too much to build & operate

Reality

- FirstNet is a nationwide platform; Public safety sets rules locally
- Public safety maintains local management
- Commercial carriers cannot offer priority or cost protection
- FirstNet has substantial opportunities to partner to lower construction and operating costs

FirstNet’s goal: bring nationwide scale, ecosystem, interoperability, and platform. Enable public safety to choose suitable services, devices, prioritization, and access.
# FirstNet Elements

## USER REQUIREMENTS
- Web Access
- State & Local Management
- Existing and New Data Apps
- Mission Critical Voice
- Priority Access
- Non-Mission Critical Voice
- PTT and Group Dispatch
- Lower Total Cost

## PLATFORM
- Nationwide Connectivity
- High Capacity Priority Access
- Hardened PS Grade
- Coverage

## SUPPORT ASSETS
- Spectrum (BAND 14) 700 MHz
- LTE Technology and Infrastructure
- Federal Support; Financing Support: Public/Private Partnership

### First Responder Network Authority
4/18/2013
FirstNet Elements

**USER REQUIREMENTS**

- **Web Access**
- **Existing and New Data Apps**
- **State & Local Management**
- **PTT and Group Dispatch**
- **Mission Critical Voice**
- **Lower Total Cost**

**PLATFORM**

- **Nationwide Connectivity**
- **High Capacity Priority Access**
- **Hardened PS Grade**
- **Coverage**

**SUPPORT ASSETS**

- **Spectrum (BAND 14) 700 MHz**
- **LTE Technology and Infrastructure**
- **Federal Support; Financing Support: Public/Private Partnership**

**Done or on track to be completed**

- Have visibility and traction
- Working on greater visibility/predictability

© First Responder Network Authority 4/18/2013
FirstNet Support Assets

- Design with national, regional and local operating partners to utilize assets
- Initiate RFP processes
- Meet with potential suppliers
- Leverage existing public safety, operator and utility infrastructure

FirstNet’s goal: work with operating partners to lower construction and operating costs, yielding lower cost of ownership to public safety
FirstNet Platform

- Nationwide Connectivity/High Capacity
- Priority Access
- Hardened PS Grade
- Coverage
  - Terrestrial, Deployables, Satellite

FirstNet will build a standards based LTE platform
- Define RF engineering (RAN Plan) and network core requirements
- Test and evaluate preemption technology
- Exploring options for working with operating partners
- Understand coverage requirements by state
- Define hardening requirements

FirstNet’s goal: finalize network design after full consultation with states/local entities and operating partners
Hardening for Public Safety Grade Reliability

1. Physical Resiliency
   Building to sustain network in adverse conditions (sites)

2. Physical Redundancy
   Avoiding single points of failure across the network (power, back haul, sites, coverage)

3. Operational Resiliency
   Maintaining the network to ensure reliability (spares management and preventative maintenance, primary assets recovery after outages)

4. Operational Redundancy
   Providing backup equipment (Deployables) and technology (commercial carrier roaming/direct mode) that facilitate operations during primary network failure
FirstNet User Requirements

- Work with standards bodies on 3GPP, PTT, dispatch and mission critical voice
- VoLTE is advancing, VoIP exists (no handoff)
- Wide range of new public safety apps to take advantage of LTE not yet developed
- State consultancy outreach project to define local management criteria, priorities

FirstNet’s goal: build the lowest cost and best standards-based platform upon which Public Safety can locally deploy services which fit their requirements
### Early Builders Making Progress

<table>
<thead>
<tr>
<th>Early Builders</th>
<th>BTOP Award</th>
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<tbody>
<tr>
<td>1. Adams County, CO</td>
<td>$12,137,422</td>
</tr>
<tr>
<td>2. Charlotte, NC</td>
<td>$16,702,490</td>
</tr>
<tr>
<td>3. Mississippi</td>
<td>$70,055,000</td>
</tr>
<tr>
<td>4. LA-RICS (Los Angeles)</td>
<td>$154,640,000</td>
</tr>
<tr>
<td>5. Bay-RICS (San Francisco)</td>
<td>$50,593,551</td>
</tr>
<tr>
<td>6. New Jersey</td>
<td>$39,638,152</td>
</tr>
<tr>
<td>7. New Mexico</td>
<td>$38,699,997</td>
</tr>
</tbody>
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## Update on FirstNet Next Steps

### Moving FirstNet Forward

<table>
<thead>
<tr>
<th>Step Description</th>
<th>Start Dates</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. State &amp; Local Consultancy Process</td>
<td>May 2013</td>
<td>Planning with NGA, board</td>
</tr>
<tr>
<td>Regional Meetings</td>
<td></td>
<td></td>
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<tr>
<td>2. NTIA Grant Process to States, Local, Tribes;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase 1 (SLIGP)</td>
<td>Awarded by July 15, 2013</td>
<td>Coordinating with NTIA</td>
</tr>
<tr>
<td>3. Early Builders Negotiations</td>
<td>February 2013</td>
<td>On track for May completion</td>
</tr>
<tr>
<td>4. State Data Collection</td>
<td>POST NTIA grants</td>
<td>Announce at regional meetings</td>
</tr>
<tr>
<td>5. RFI and RFP Processes</td>
<td>Summer 2013</td>
<td>In progress</td>
</tr>
<tr>
<td>6. Vendor Outreach</td>
<td>Summer/Fall 2013</td>
<td>PSCR to host forums</td>
</tr>
<tr>
<td>7. FirstNet State Level RAN Concept Plan</td>
<td>Fall 2013</td>
<td>Dependent on 1, 5, 6</td>
</tr>
</tbody>
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FirstNet Board Role

- State Consultancy Plan
- Strategic Plan
- Business Plan
- Technical Standards Plan
- Network Build Plan
- Operating Plan

Balance: Proper measures of input with meaningful levels of progress.
FirstNet Exists to Serve Public Safety

Creating FirstNet will require an unprecedented level of public-private partnership, collaboration and shared commitment to the well-being of all Americans.
Thank you.

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