



Creating a Nationwide Network for Public Safety



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FirstNet Board Member
and
NASEMSO Communications
Technology Advisor

National Association of State EMS Officials
2013 Annual Meeting



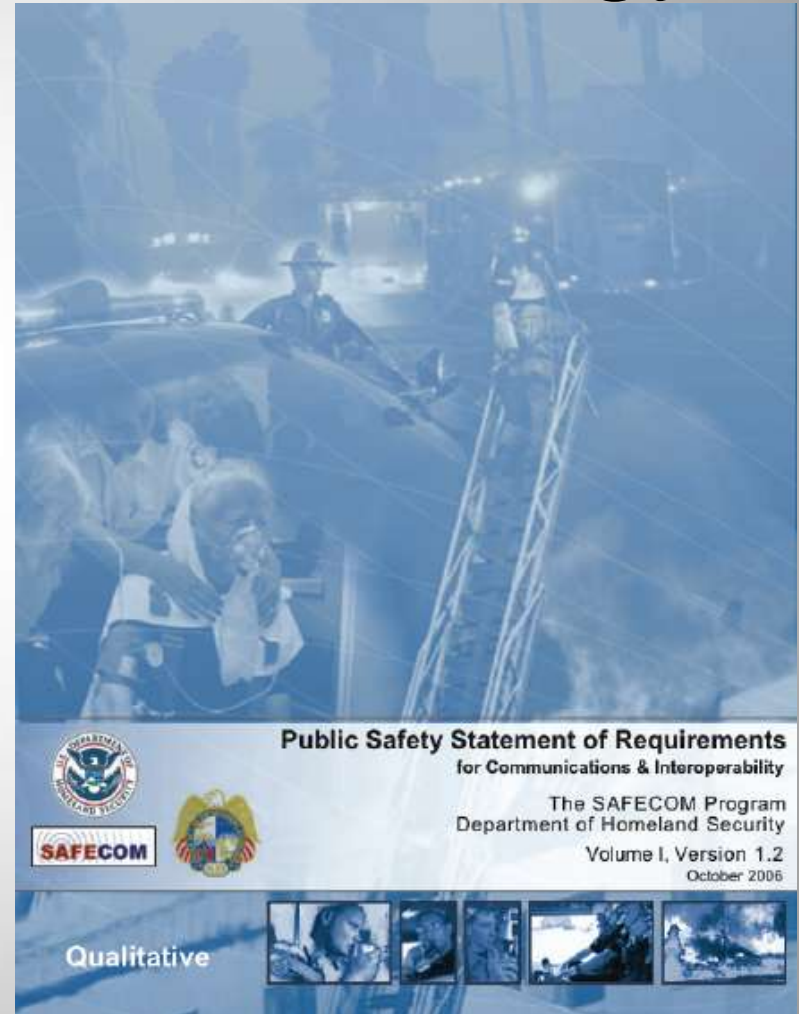


EMS Needs Improved Communications Technology

Joint Advisory Committee on
Communications Capabilities of
Emergency Medical and Public
Health Care Facilities



Report to Congress
February 4, 2008



The ability to send data and images will greatly improve EMS response.



No See/Hear/Clue

Situational Awareness

Many Pictures

Common Operating Picture

Sequential Processing

Parallel Processing

Inability to Adopt Available Diagnostic Applications

≠ 20+20+10+30+120+40 Minutes



Trauma, Heart Attack, Stroke.....

Ridgeway EMS 1

EMSREMS

ACN Alert

MERCY
HOSP.

UNITED AMB.

LIFE FLIGHT

MVC

CITY FIRE/RESCUE

CITY TRAUMA CTR.

2 Patients/45MPH
1001 Hendrix Highway (Nash/Oak Sts.)
Toyota Prius/Object/Head On

MVC

++Airbags ++Belts

++Severity

NEW SHARON FD
1ST RESPONDERS

RIDGEWAY EMS

MVC

VERMONT
VOLUNTEER
AMBULANCE

RIDGEWAY FD
EXTRICATION/HAZ MAT

RIDGEWAY HOSP.

Other Medical
Alarms

Information from ONSTAR can help save lives.

Crash at 8:29 PM, 5/8/10

Probability of Injury: 92%

[Add/Edit Passenger Details](#)

Passenger	Age	Gender	Safety Belt	Entrapment	Ejection	Prob. of Inj.
1	40	F	N	Y	N	92.0%

DeltaV: 30mph

PSAP Contact:

PAYETTE
1130 3RD AVE N
PAYETTE, ID 83861
(208) 642-6006

Incident Information:

Incident ID: 1438314045
Event Notification: Vehicle Accelerometer
Event Verified: ☐ No
Rollover: No
Data Provider: OnStar
Provider Contact: 800-488-7827

Vehicle Information:

Color: White
Year: 2009
Manufacturer: General Motors
Make: Chevrolet (1)
Model: Cobalt Sedan

[<< Previous Report](#) [Next Report >>](#) [Create Event](#) [Close](#)

Direction of Force

☒ Airbag Deployed

Car Curb Weight (lbs): 3200

Passenger Side Damage? ☐ No

Rear Damage? ☐ No

At A35: Look out for an accident.

ID: ONSTAR-1438314045.2
Status: **CURRENT** [Auto-held \(updated\)](#)

Author: unknown
Received: 10:25 PM, 5/8/10

[Map](#) [Satellite](#)

Recommended action based on probability of injury calculation:

Provide information to PSAP and suggest vehicle extrication, helicopter request and closest and/or receiving hospital early notification.

Ridgewa

FREMS

TOYOTA

PRIUS

Gasoline-Electric Hybrid

*Emergency Response Guide
(Revised)*



UNITED AMB.

ACN Alert

MVC

CITY FIRE/RESCUE

MVC

NEW SHARON FD

 **MVC** 

VERNO

RIDGEWAY EMS

RIDGEWAY FD

2 Patients/45MPH/Front Seats

2004 Toyota Prius Head On/Object

++Doors ++Patients (Driver Priority)

Ridgeway EMS 1

EMSREMS

Parallel Processing

DOTREMS

MERCY
HOSP.

UNITED AMB.

LIFE FLIGHT →

ETA: 12 Min's.

MVC

CITY FIRE/RESCUE

JONES MEM. HOSP. CARDIAC
(DIVERT)

DIABETIC

CITY TRAUMA CTR.

Team On Alert for Pt: +

VERNON FD
VOLUNTEER
AMBULANCE

NEW SHARON FD
1ST RESPONDERS

RIDGEWAY EMS

ED On Alert for Pt: +

 MVC 

RIDGEWAY FD
EXTRICATION/HAZ MAT

RIDGEWAY HOSP.

Ames St. to Clark St. to Old
Highway (E); 15.2 Mi.s;
#3945 Old Highway

ETA: 10 Min's.

ROAD CLEARANCE

Lights + /Cars ++

FirstNet devices will improve accident triage and enable parallel processing.





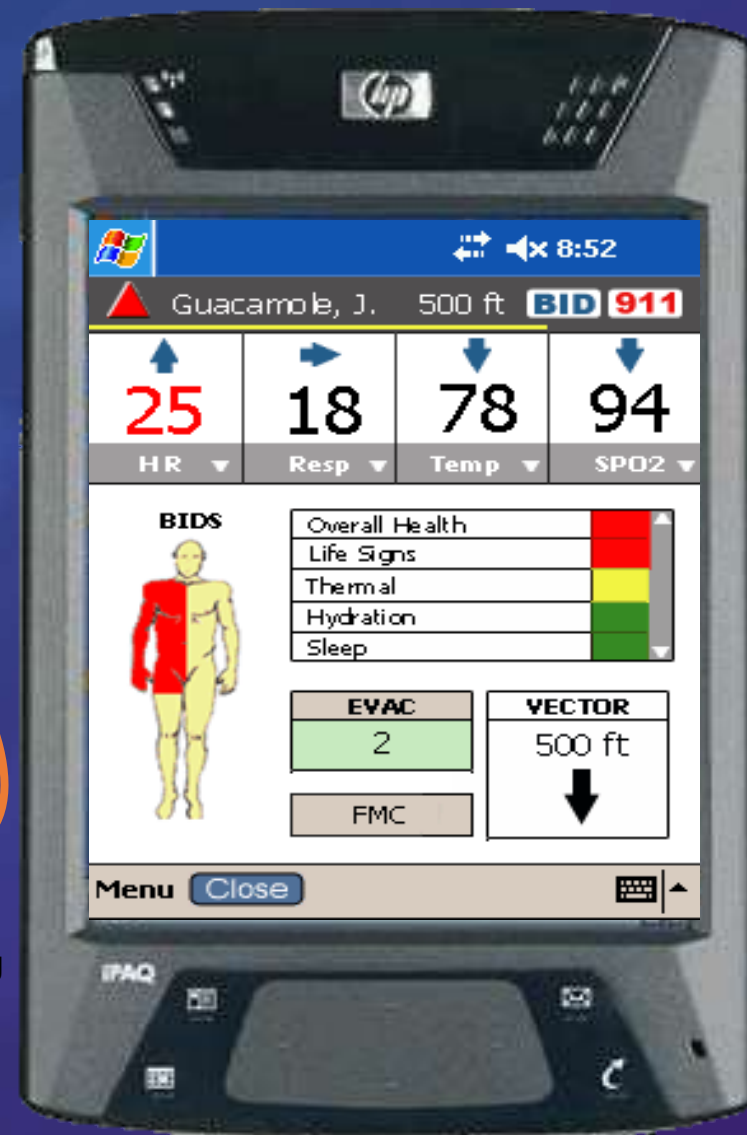
Electronic Health Record

Portable PSCD Type Platform

Speech Recognition Input

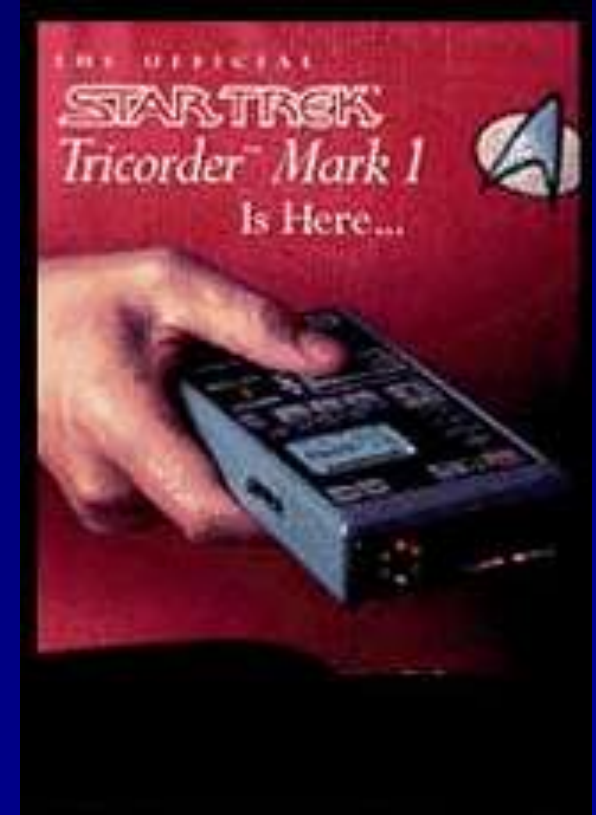


Wireless Patient Monitoring



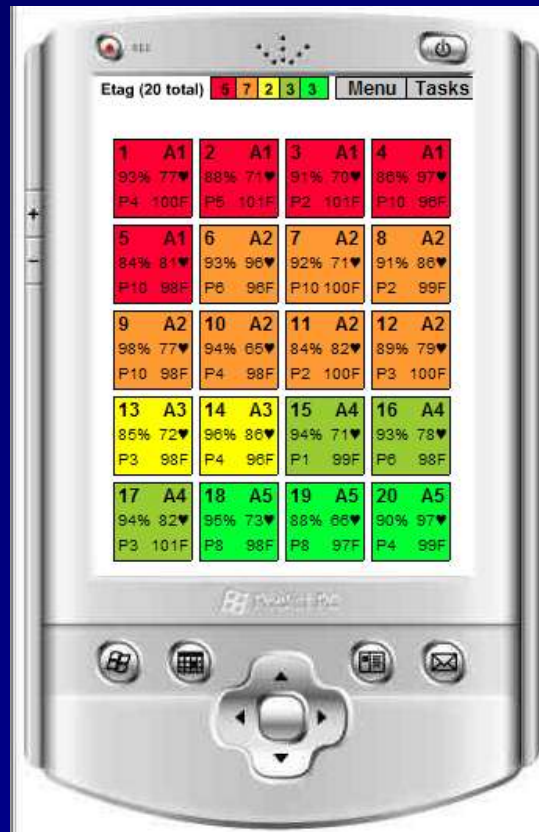
■ Other Technologies

- 2 Way Video (Virtual MD/Community Paramedicine)
- Stand Off VS Monitoring
- Portable CT Scan (Images)
- Portable Ultra Sound (Video & Images)



Other Technologies

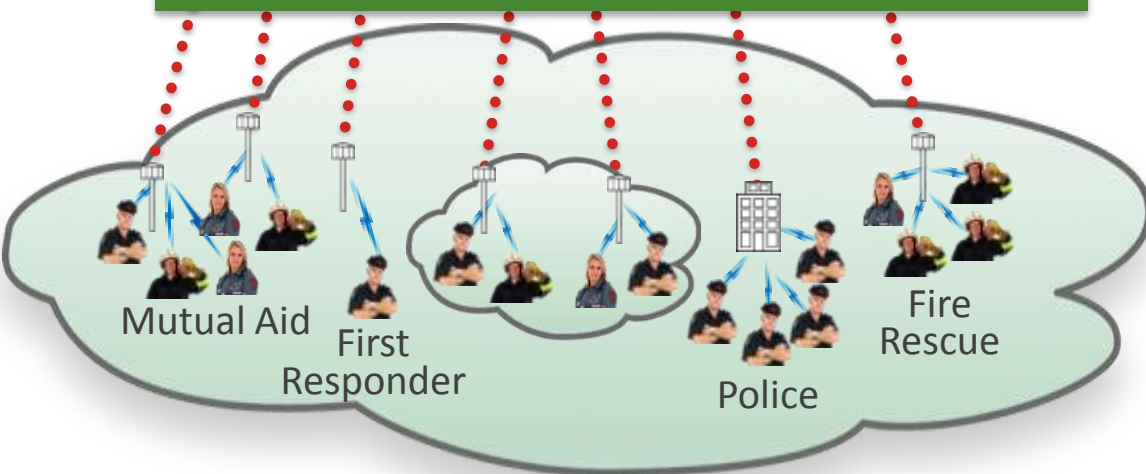
- Multiple Patient Monitoring (Mass Casualty Incident)
- Multiple Responder VS Monitoring
- Infra Red Crowd Disease Detection



Today, public safety communicates over different networks.

Voice

Over 10,000 Separate Private LMR Networks



Data

Commercial Wireless Networks



The Downside

- Communication barriers
- Limited buying power
- Higher costs

- Not public safety-grade
- Network overload or failure
- No priority access

Communications shortcomings are amplified during emergencies.



After 9/11, the public safety community fought hard to convince Congress that it needed a dedicated, reliable and interoperable network to provide advanced data communications capabilities nationwide ...fulfilling the last remaining recommendation of the 9/11 Commission.

**Middle Class Tax Relief
and
Job Creation Act
February 22, 2012**



How Will FirstNet Help?

What is FirstNet?

How Will FirstNet Impact Public Safety?

Who is FirstNet?

Plans for Creating FirstNet

Working Together to Benefit Public Safety



What is FirstNet?



WHAT IS FIRSTNET?

FirstNet will be the first high-speed, broadband and data network dedicated to public safety.



FirstNet will be a single nationwide network.....



that facilitates communication by public safety users during emergencies and on the job every day.

FirstNet will be a bigger, more reliable, resilient and secure wireless “pipe”.

Public Safety-Grade

- Reliable
- Hardened
- Redundant
- Secure



Public Safety Applications

- 4G data for video & web
- Non mission-critical voice
- Existing and new applications

Public Safety Effectiveness

- Dynamic Priority Access
 - Force Multiplier

How will FirstNet Impact Public Safety?



“FirstNet will be a force multiplier, enabling collaboration that will help save lives, solve crimes and keep our communities and emergency responders safer.”

Jeffrey D. Johnson, Chief (Ret.)
CEO Western Fire Chiefs
Association
Acting Customer Advocacy Officer
FirstNet Board Member



FirstNet is developing its education and outreach plans for tribes.

- Appointed Kevin McGinnis as Board lead
- Retained a consultant to support our planning
- Addressing the challenge of a mandate to work through state governors even though tribes are sovereign nations
- Began building important relationships during regional workshops and tribal break-out sessions
- Planning to hire additional employees for tribal outreach

What will FirstNet do for you?



Communication

- Data
- Video: 1-to-many
- Messaging/Group Text
- Images
- Voice Non-mission critical initially

Applications

- Your applications (Private, Selective sharing)
- FirstNet Applications
- Syndicated Applications



Services

- Data Storage
- Recordkeeping
- Search
- Databases (CJIS, etc.)

Capabilities

- NOC Status
- Activation
- Product Ordering
- Dynamic Priority Access



Who is FirstNet?



FirstNet is an independent authority within NTIA with a mandate by law including:

PURPOSE	To create a nationwide, wireless, interoperable public safety broadband network
Network	Single network architecture, LTE technology
Spectrum	700 MHz D Block
Funding	\$7B through spectrum auctions proceeds
Sustainability	Self-funded through fees

American Association of State Highway & Transportation Officials;
Association of Public-Safety Communications Officials-International,
American Public Works Association,
Forestry Conservation Communications Association,
Governors Homeland Security Advisors Council,
Interagency Board, International Association of Chiefs of Police,
International Association of Emergency Managers,
International Association of Fire Chiefs, International City/County Management Association,
International Municipal Signal Association, Major Cities (Police) Chiefs Association,
Major County Sheriffs' Association, Metropolitan Fire Chiefs Association, National Association of Counties,
National Association of Emergency Medical Technicians,
National Association of Regional Councils, National Association of State Chief Information Officers,
National Association of State EMS Officials, National Association of State 9-1-1 Administrators,

National Association of State Technology Directors, National Association of Telecommunications Officers and Advisors, **National Congress of American Indians,**
National Criminal Justice Association, National Conference of State Legislatures,
National Council of Statewide Interoperability Coordinators,
National Emergency Management Association,
National EMS Management Association, National Emergency Number Association,
National Governors Association, National League of Cities,
National Public Safety Telecommunications Council, National Sheriffs' Association, National Consortium of Justice Information Statistics,
U.S. Conference of Mayors, SAFECOM Exec,
Fire Non-Management First Line Responder,
Police Non-Management First Line Responder

- 41 Members
- Executive Committee had a two-day briefing with FirstNet technical team in March and met during PSCR in June
- Executive committee will meet monthly for updates with the General Manager
- Outreach for conferences
- Handling specific projects
 - User impacts of a shared network
 - Applications support
 - Training needs

Our GM is building the leadership team and making other key hires.

- FirstNet General Manager Bill D'Agostino Hired in April 2013
- \$194M Budget/Ops Plan approved by Board at August meeting
- Five full-time employees as of 8/1
- Contractors engaged to fill immediate technical, outreach and communications work.
- FirstNet working to hire full-time employees.
- Building outreach teams to work at the county, city and tribal level.

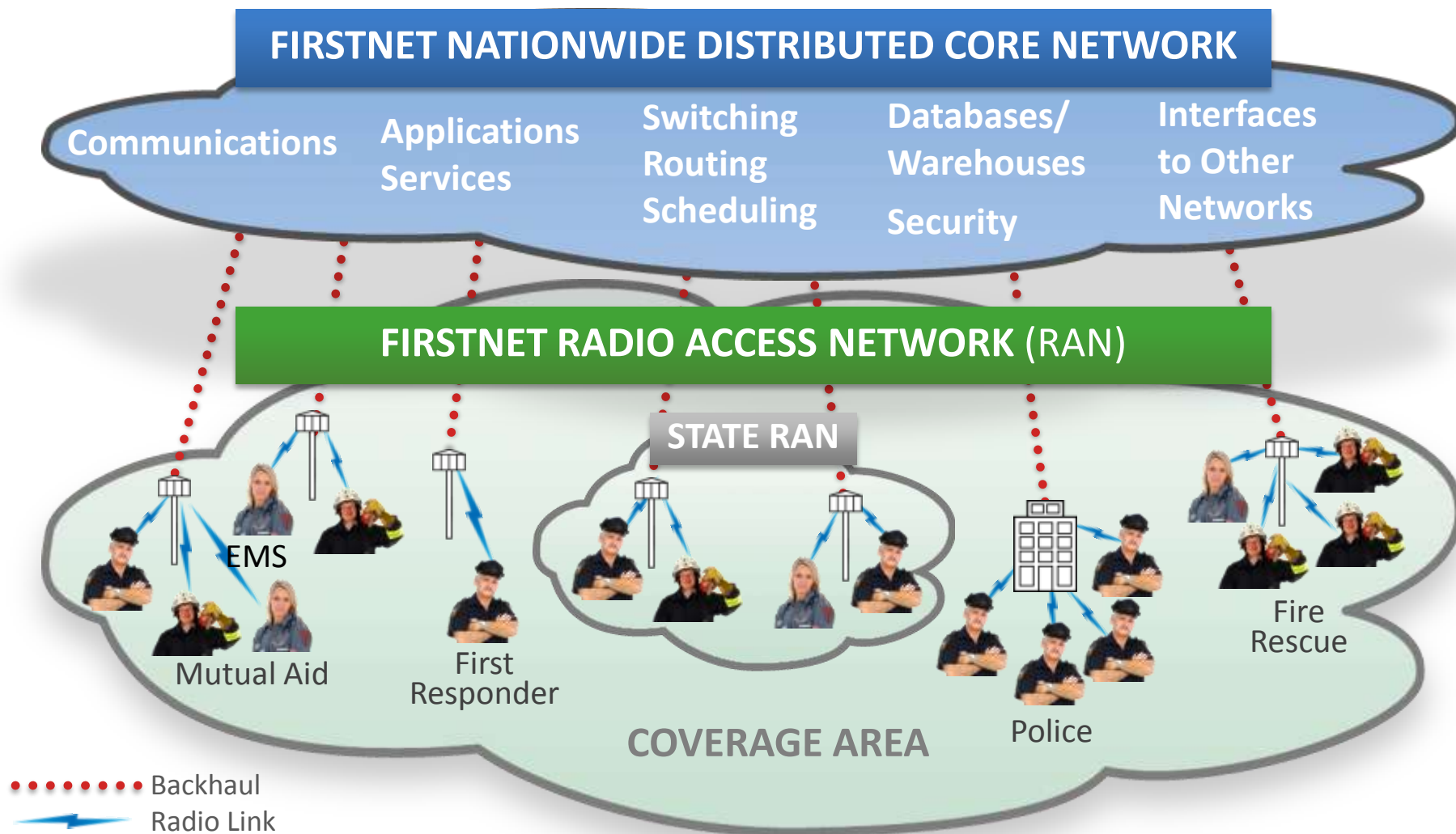
An organization that will follow these guiding principles ...



Plans for Creating FirstNet



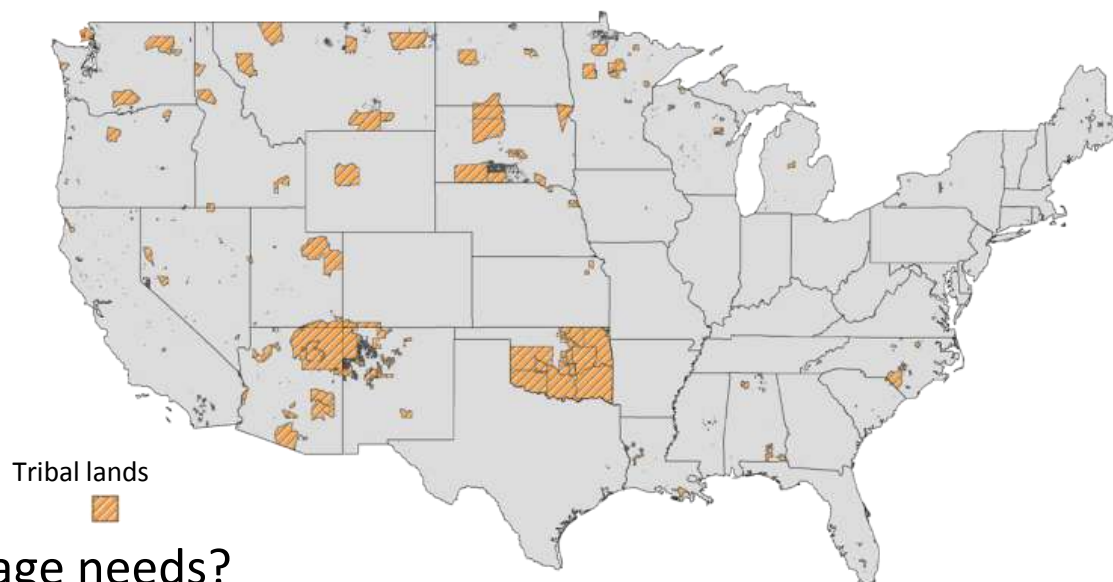
FirstNet will have a nationwide core connected to local RANs.



Working with the public safety community, we will define what “public safety grade” means.

FirstNet Attribute	Defining Public Safety Grade
Coverage	“Where public safety needs it” (Geographic)
Reliability	“You can bet your life on it”
Resiliency	“Multiple back-up options”
Emergency Communications	“Your trusted resource”
Group Communications	“Essential to teamwork”

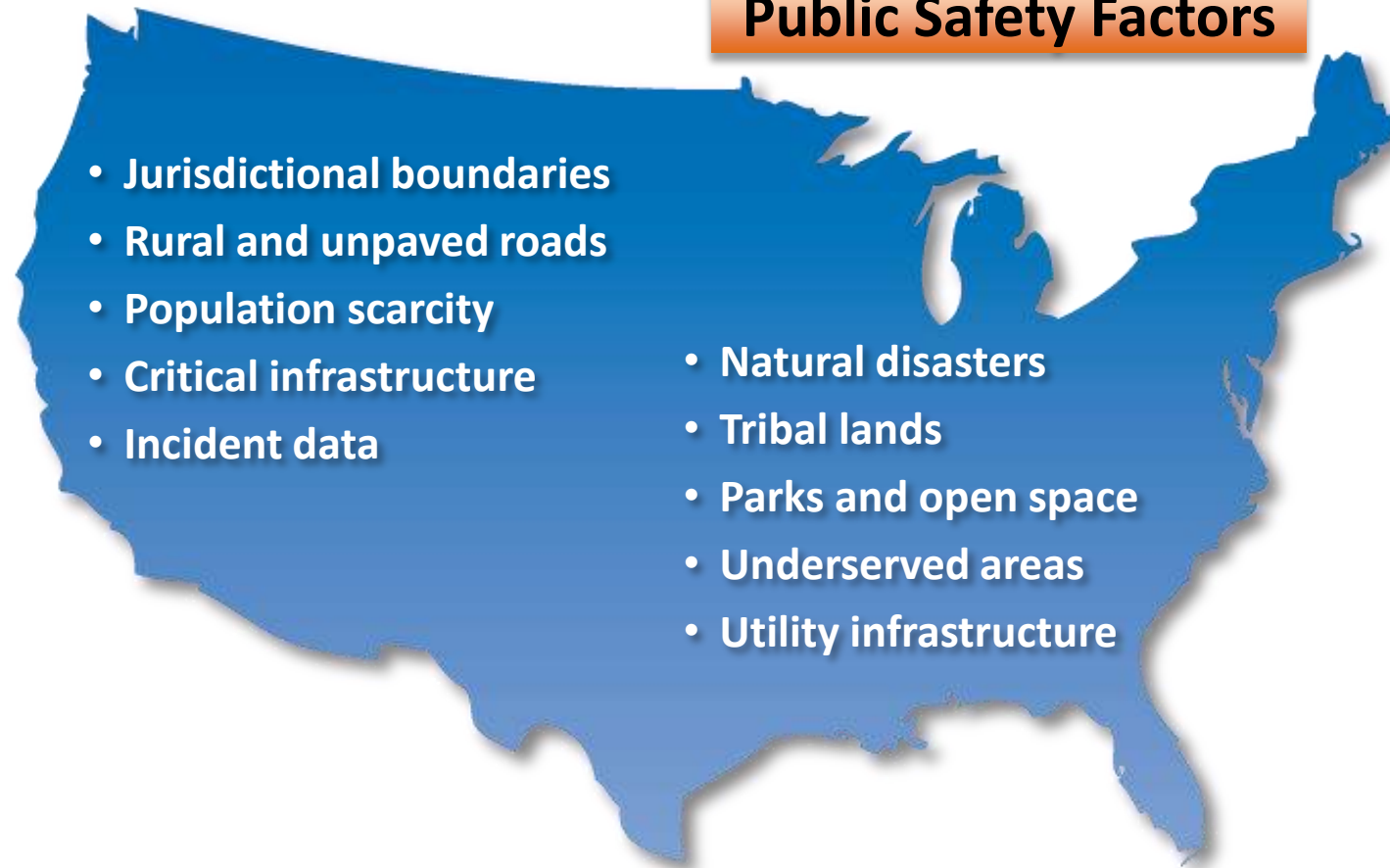
The needs of tribes will be factored in to the network design.



- What are the unique coverage needs?
- What assets can be leveraged to help keep costs down?
- What are the procurement and budget considerations?

FirstNet coverage considerations will go far beyond those of commercial networks and address local needs.

Public Safety Factors



Our current thinking is based on extensive public safety input.
More than 1,300 baseline requirements



NPSTC Requirements	# of Req's
User Services	312
Network Services	209
Transport Requirements	154
System Design	66
User Equipment	60
Local Operations Support	157
Migration and Evolution	60
Governance	10
Policies and Procedures	94

FCC Minimum Interoperability Specifications	# of Req's
Requirements (Must)	46
Considerations (Should)	55
Interfaces (Architectural)	11
Recommended Interfaces Requirements	9

 **FirstNet** will:

- Build on the foundation of early work done by public safety groups
- Seek vendors who will meet or exceed these requirements
- Broaden the requirements to increase flexibility and decrease costs

RFIs and RFPs will help us create the FirstNet business model.

Break even and build a self-sustaining network

- Fee for service
- Leverage value of the spectrum
- Reflect value of contributed assets and partnerships



“FirstNet intends to offer public safety grade services at a cost that’s compelling to users.”

— FirstNet Tenet

To date FirstNet has issued 11 RFIs. Six more are in the works.

Devices

RAN RFIs

Network Partnering and RAN Provisioning

Antenna Systems

Microwave Backhaul Equipment

Deployables

Satellite Service

CORE RFIs

Enhanced Packet Core (EPC)

Transmission/Transport

Data Center

Network Management Center/Operations Management Center (NMC/OMC)

Network Service Platform

Initially, FirstNet will augment land mobile radio networks.



- FirstNet expects to launch as a data only network
- Public safety will rely on LMR for mission-critical voice for many years
- Where it makes engineering and economic sense, FirstNet can be co-located on existing LMR infrastructure
- Our goal is to allow voice to pass between the two networks
- FirstNet can't replace LMR until push-to-talk, off-network and other mission-critical voice functionality is available and until users embrace FirstNet.

Eventually FirstNet plans to provide mission-critical voice functionality.

Functionality

- Push-to-talk
- Direct mode
- Emergency calling
- Call set-up speed
- Public safety-grade performance



FirstNet is working to accelerate standards development for mission-critical VoLTE voice.

Working Together to Benefit Public Safety

State Consultation Process



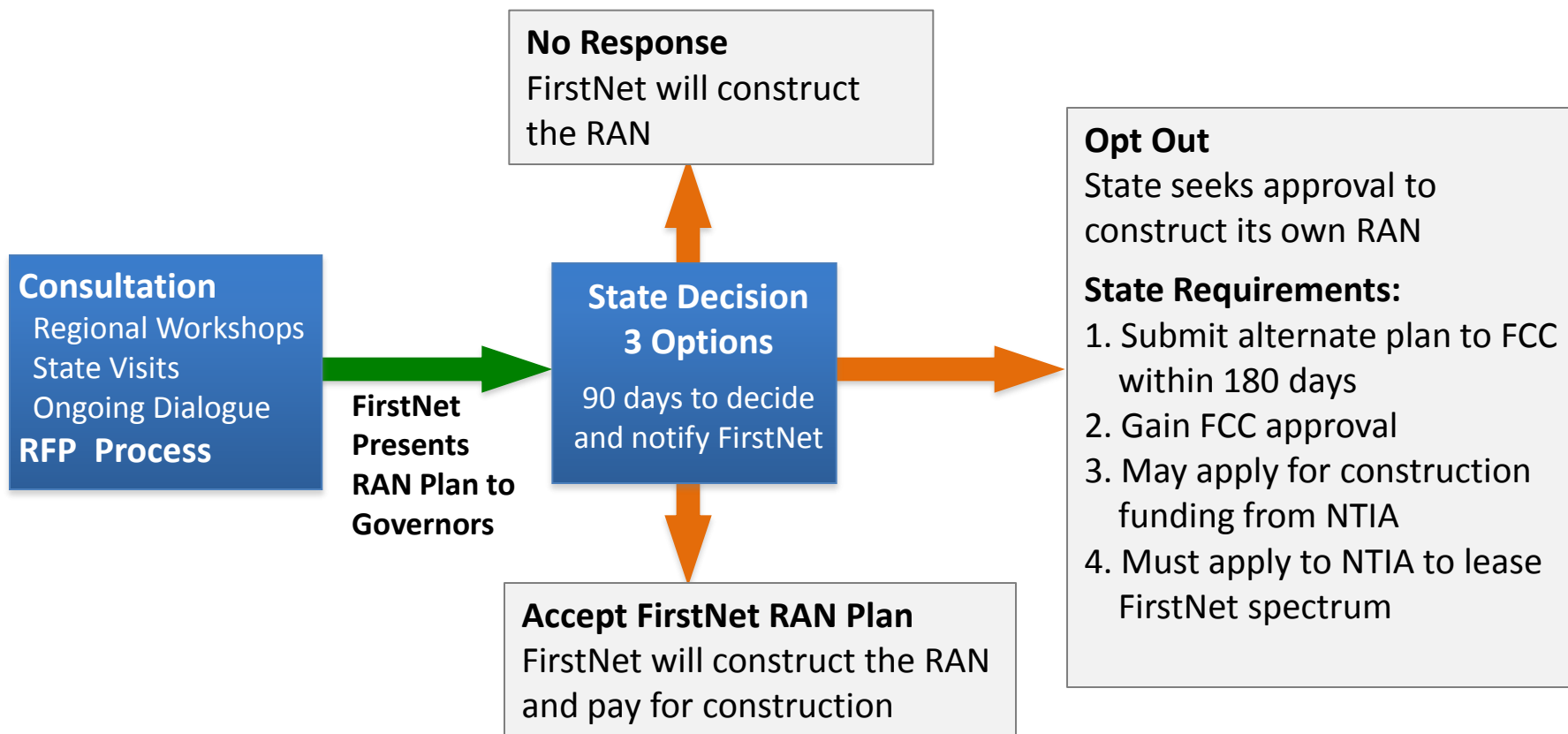
FirstNet completed six regional workshops and is planning state visits.

FirstNet will continue to consult with the states, tribes, territories and localities to gather requirements for developing state network build-out plans.

Activities	When
Nationwide, Regional Workshops	Conducted May – June 2013
Pre-Consultation Coverage Workshops	To be scheduled with DHS OEC prior to state visits
Individual State Visits	After FirstNet staff is hired and pre-consultation coverage workshop with OEC
Federal and Tribal Outreach	Planning is underway to address the needs of these key users
Data Collection	Commencing with Phase 2 SLIGP Funds Release



FirstNet will collaborate with states to develop and deliver a RAN plan that meets their needs with the goal of avoiding surprises.



Top 5 Things You Can Do

1. Stay informed about FirstNet progress via www.firstnet.gov
2. Work with adjacent state(s) point of contact(s)
3. Get involved in the process
4. Give input via your PSAC member





FirstNet will create a network for millions of public safety users who need to be able to send data and talk to one another to meet their mission.

Kevin McGinnis, MPS, Paramedic

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