APCO International Expo
New Orleans Louisiana August 3rd, 2014

FirstNet and Broadband Data Migration Alongside Public Safety LMR Systems

Presented by:
The Project 25 Technology Interest Group (PTIG)
www.project25.org

Program Participants

- **Moderator**
  - Steve Nichols, Acting Director, Project 25 Technology Interest Group
- **Panelists**
  - Steve Devine, Missouri Statewide Interoperability Network
  - Steve Noel, SWIC- State of Oregon
  - Bradley Stoddard, SWIC- State of Michigan

Program Participants

- **…. AND MOST IMPORTANT**

- **You the Audience**
  - With Q&A Pursuit of Panelists Comments and Experiences.

Program Agenda

- **Introductions and Opening Comments**
- **Panelist Introductions**
- **Panel Presentation: FirstNet and Broadband Data Migration Alongside Public Safety LMR Systems**
  - Planning, Procurement, P25 Influences Pro and Con.
  - Partnerships
  - Implementation, First Deployments, and Adaptations after ….
- **Open Forum Q&A with Audience**
- **Closing Comments and Wrap Up.**

PTIG?

What we Do, and Who we Are.

Project 25 Technology Interest Group

What do we do:

- Provide a forum for users and manufacturers
- Manage education and training on Project 25
- Create and distribute Project 25 information
- Support the TIA standards process
- Offer Users access to the standards process without the rigor of TIA membership
- Maintain a "neutral ground" among the competing manufacturers and providers

And…

- Present Classroom Training and Panels such as THIS SESSION.

Project 25 Technology Interest Group

Who we are:

- Supporters of Project 25 technology, nurturing Project 25's adoption, growth, and expansion
- A venue fostering easy access for Users to contribute to and benefit from your interaction with the vendor community driving the on-going development of the Project 25 Standards

Set your browser to **www.project25.org**

Learning Objectives

- How is FirstNet gathering Public Safety Inputs?
- What is the forecast of LMR lifecycles and migrations?
- How do these forecasts of LMR lifecycles match the timelines of FirstNet implementation?

Session Objectives

- To identify the impact to LMR systems from FirstNet implementation (voice and data).
- To identify the impact that existing LMR systems and their legacy will have on FirstNet deployment (voice and data).
- Provide an overview of possible transition paths as FirstNet and existing LMR systems develop in several states and what issues may occur in such migration at the state level.

FirstNet as a Partner to LMR

August 2014

Steve Noel
Statewide Interoperability Coordinator
Oregon Department of Transportation

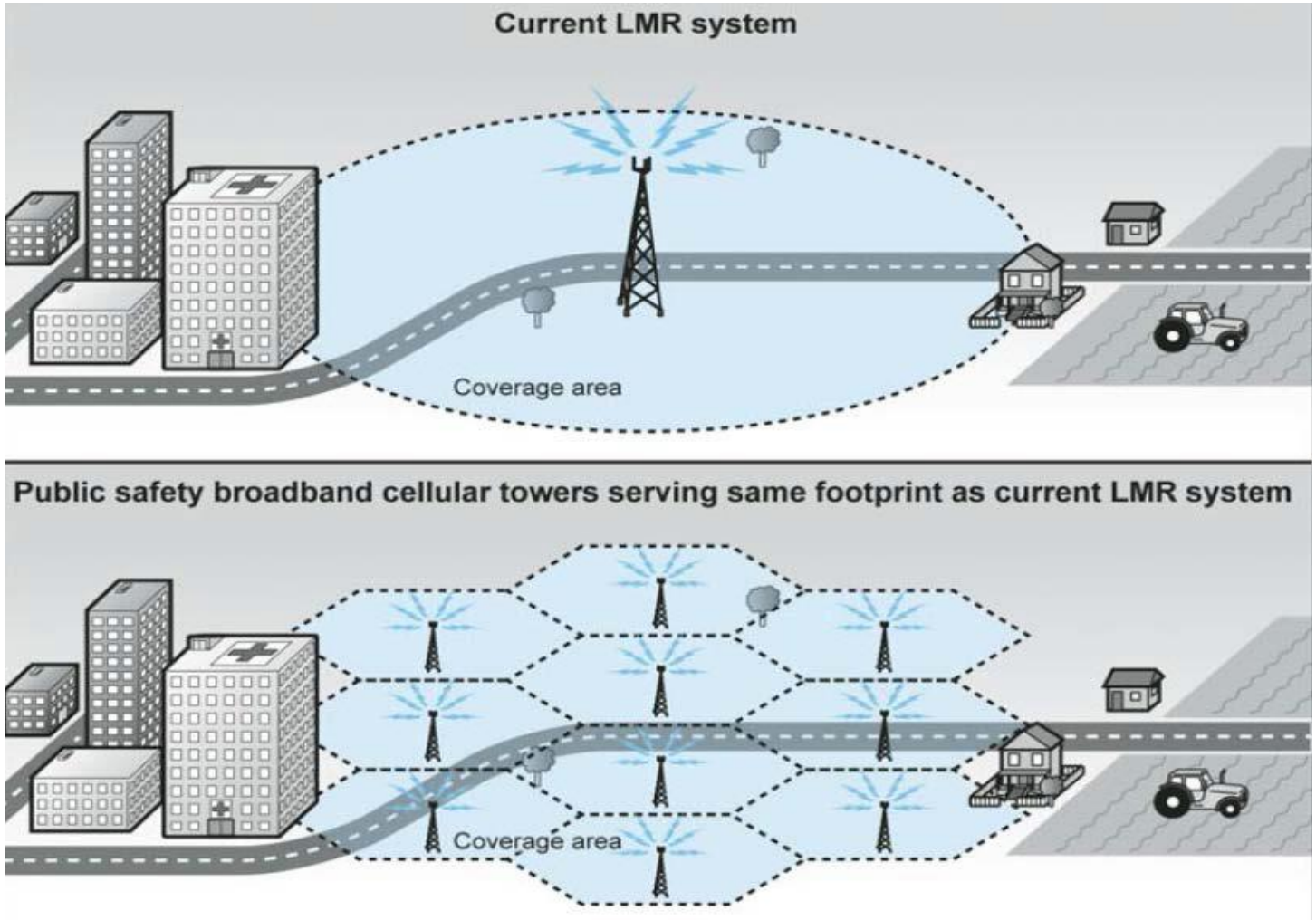
SWIC

Same types of Partnerships as LMR

- Definition
  - Take advantage of price difference
  - Striking a combination of matching deals
  - Risk-free common use
  - Mitigate Risk
  - Maximize deals
- What happens in PS today
  - Share communications sites
  - Leverage grants across jurisdictions
  - Use existing networks – versus building new

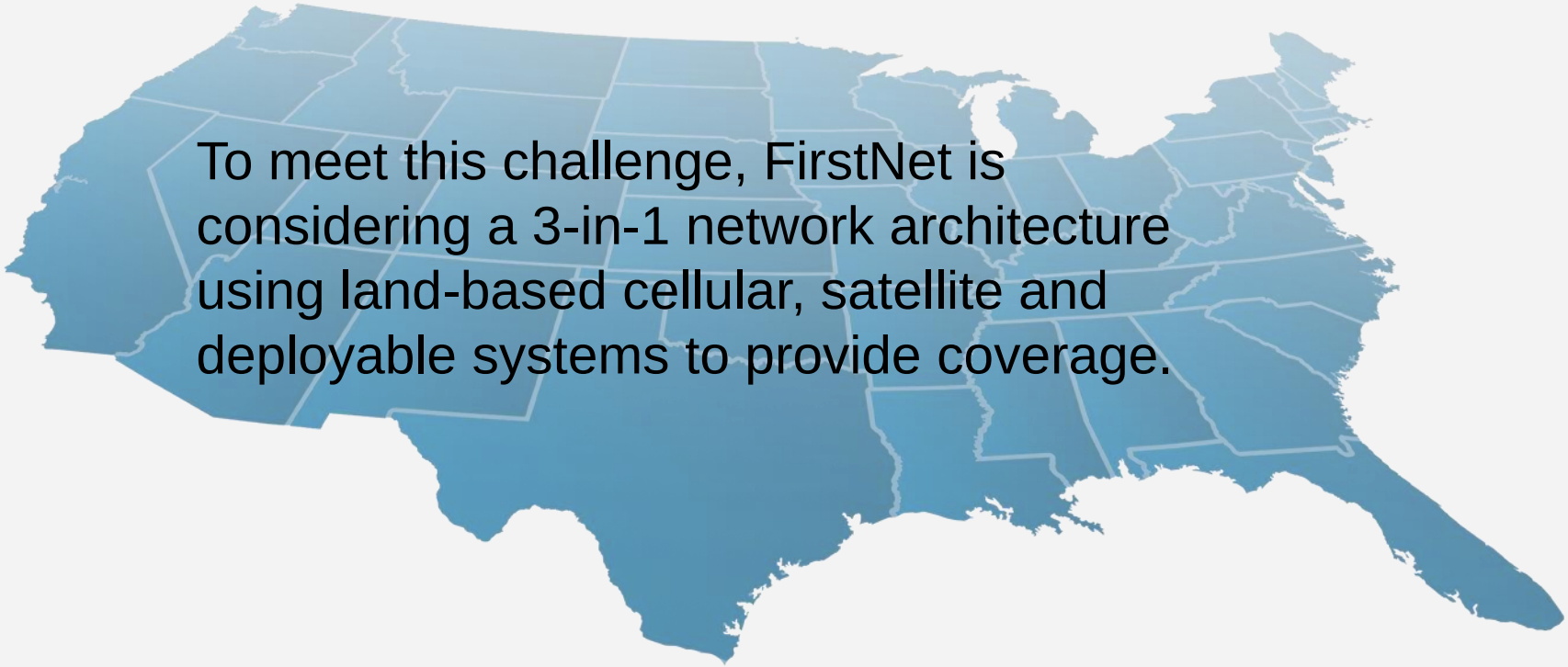
Partnerships Needed

Challenges with Coverage for FirstNet



FirstNet by the Numbers

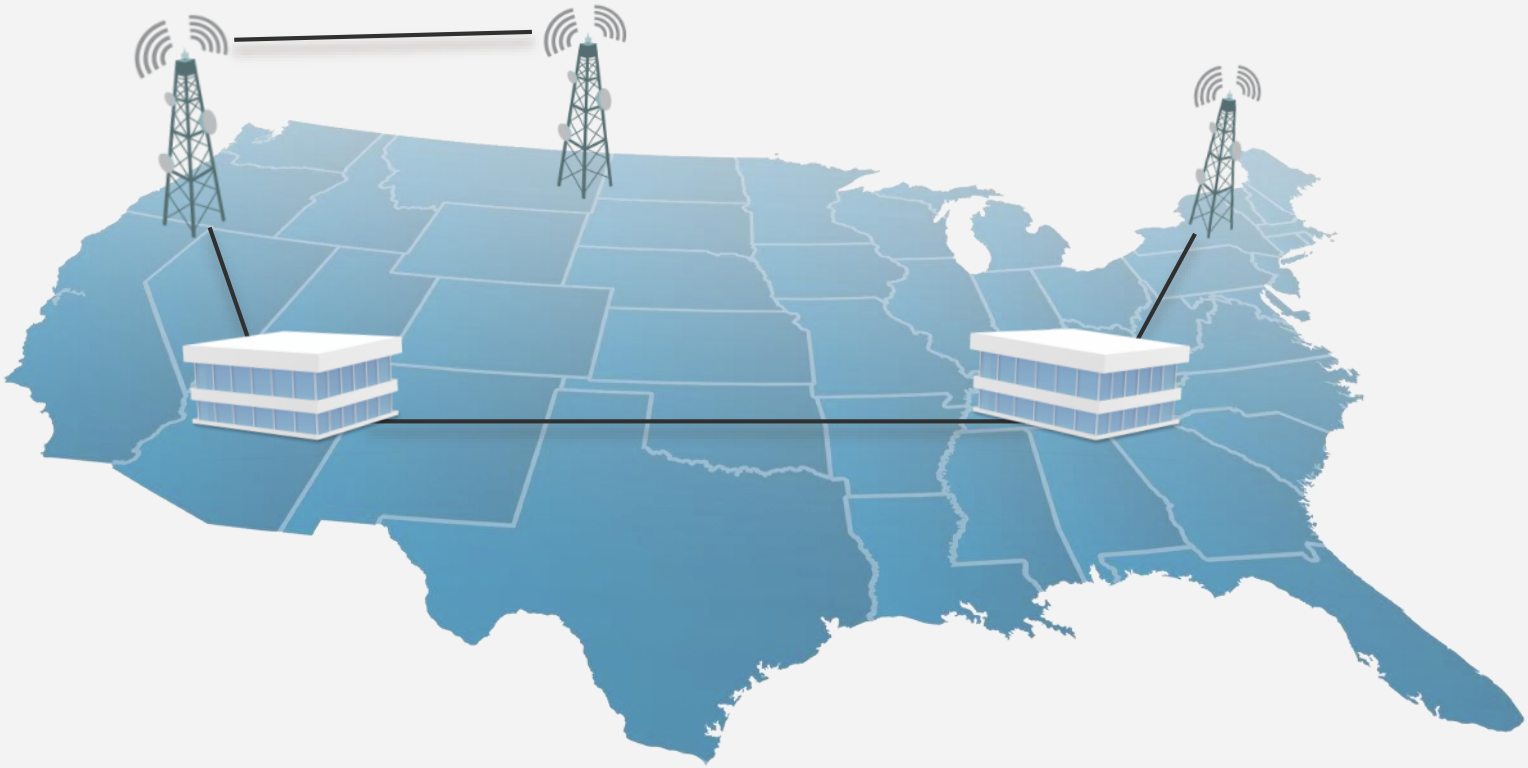
FIRSTNET NETWORK



To meet this challenge, FirstNet is considering a 3-in-1 network architecture using land-based cellular, satellite and deployable systems to provide coverage.

FirstNet by the Numbers

FIRSTNET NETWORK



FirstNet by the Numbers

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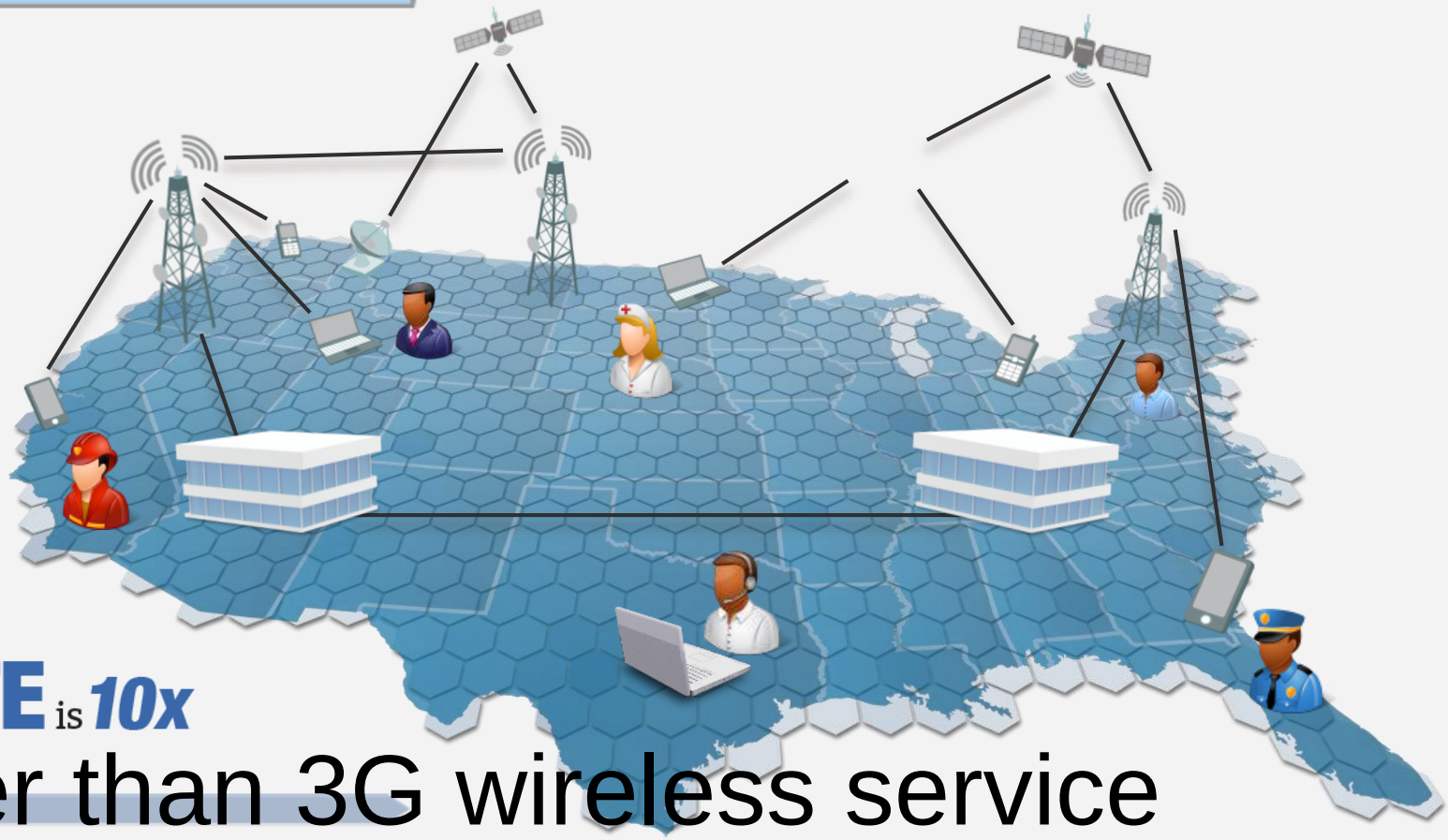
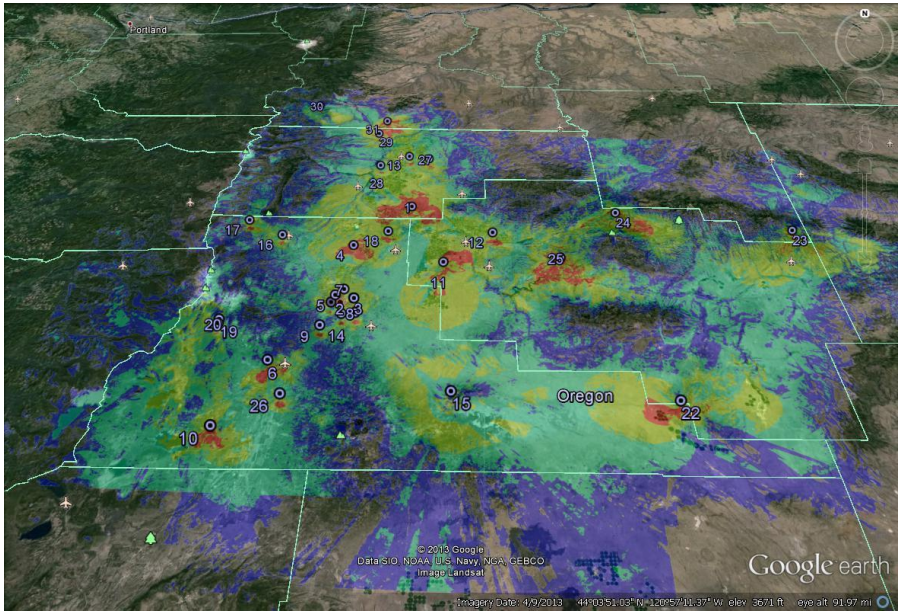


4G LTE is ***10x*** faster than 3G wireless service

Strategies for FirstNet Partnerships

- Leverage Existing Partnerships or opportunities
  - Find what works well today
  - Open up to private sector development
    - Asset sharing
    - Maintenance agreements
  - Focus on groups that work together
  - Work P3 efforts early
- Define Regional Strategies
  - Fiber Consortium in X County
  - Niche carrier network in region Y
  - New technology in Z region
    - Example technology use in school systems

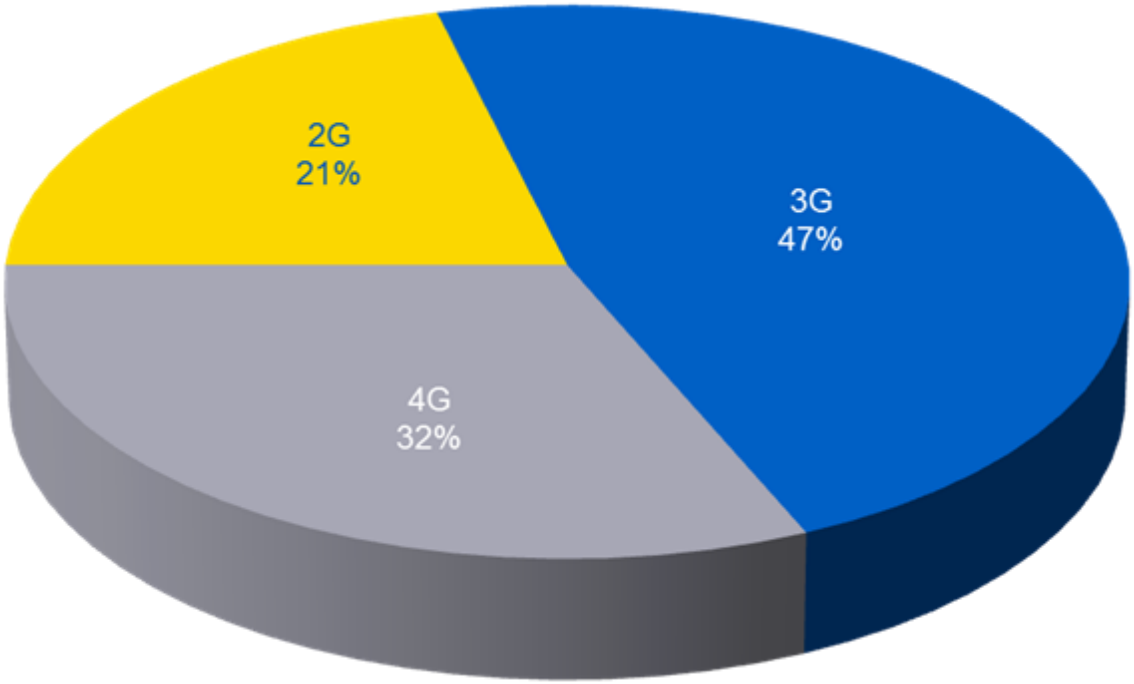


High Bandwidth Data Communications are Key to Potential Public Safety Applications

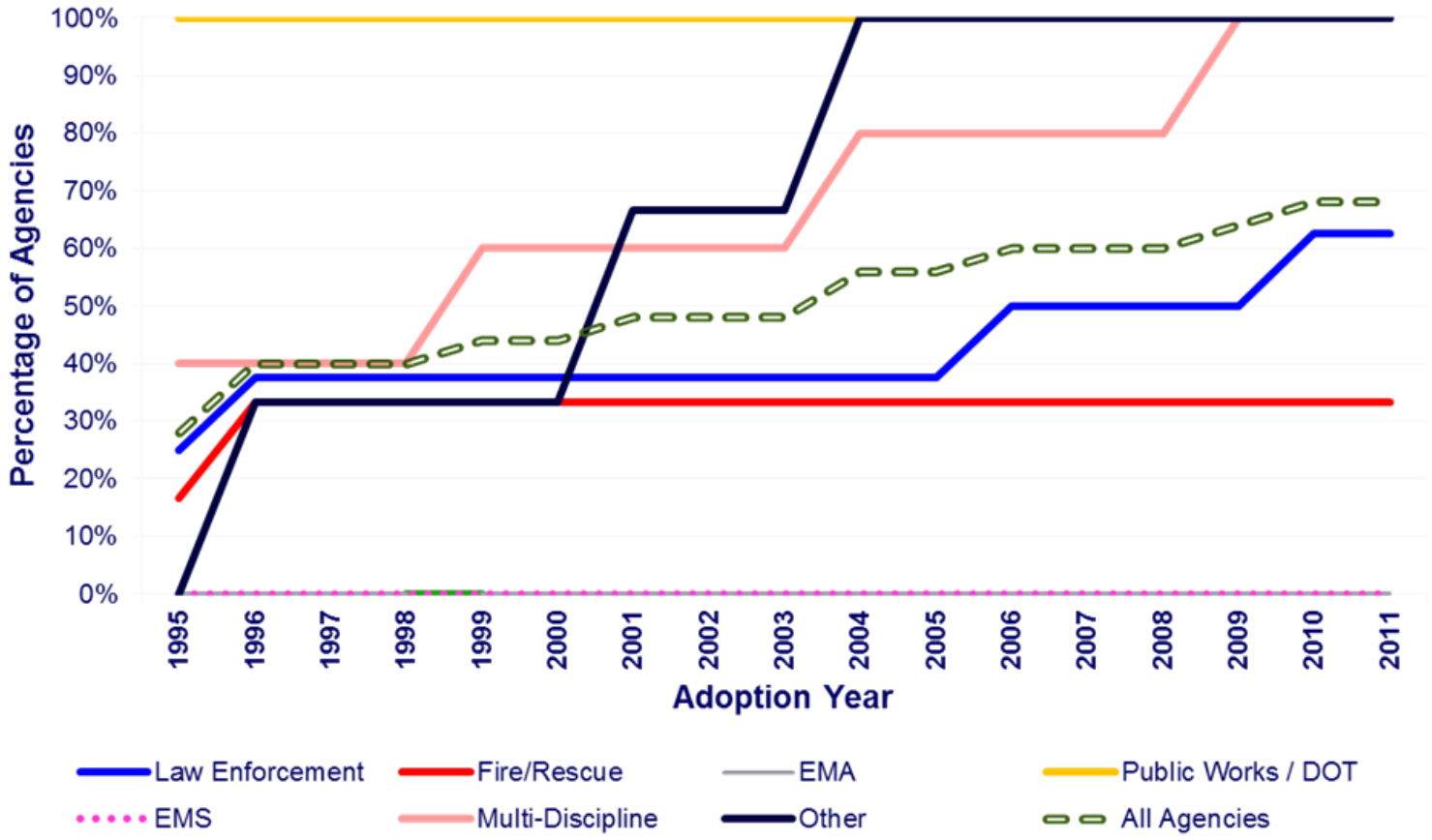
Potential Public Safety Broadband Applications	
• Video Surveillance, Remote Monitoring (streaming)	• Dynamic Mapping, Weather, Traffic
• Remote Database Access/Queries (mug shots, finger prints, reporting, NCIC, criminal history, hot files)	• Instant Messaging, SMS, One-way Notifications, Tactical Chat Rooms
• Multimedia Command and Control (floor plans, incident stills, surveillance)	• Real-time, One- and Two-Way Video in Vehicles or Handhelds
• Computer-aided Dispatch (CAD), Next Generation 9-1-1 (NG 9-1-1)	• Geo-Location and Asset Tracking (vehicle, personnel, assets)
• Records Management Systems Access (local queries)	• Mobile Office (bulk file transfer, email, Internet web access, VPN)
• Mobile Incident Command	• Geospatial Applications
• Medical Telemetry	• Automated License Plate Recognition
• Field Based Reporting	• Digital Signage, Traffic Alerts, Automated Transactions
• Remote Control of Robotic Devices	• *Standardized Push-To-Talk (PTT), Voice over IP (VoIP) - future*

Oregon Public Safety Broadband Survey: Cellular Data Technologies Used for Wireless Data

Public safety users are already using high speed wireless data services to accomplish their mission, including commercial 4G LTE technology



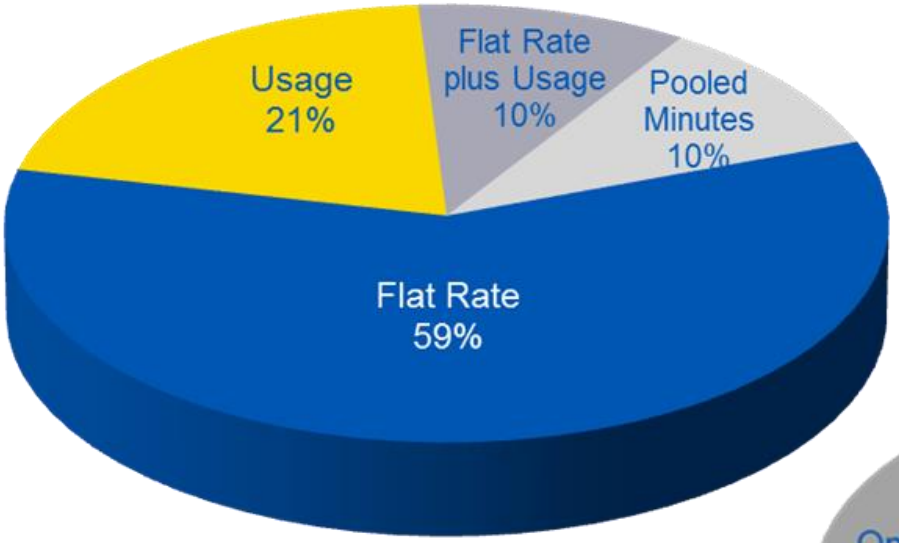
Oregon Public Safety Broadband Survey: Cellular Data Adoption

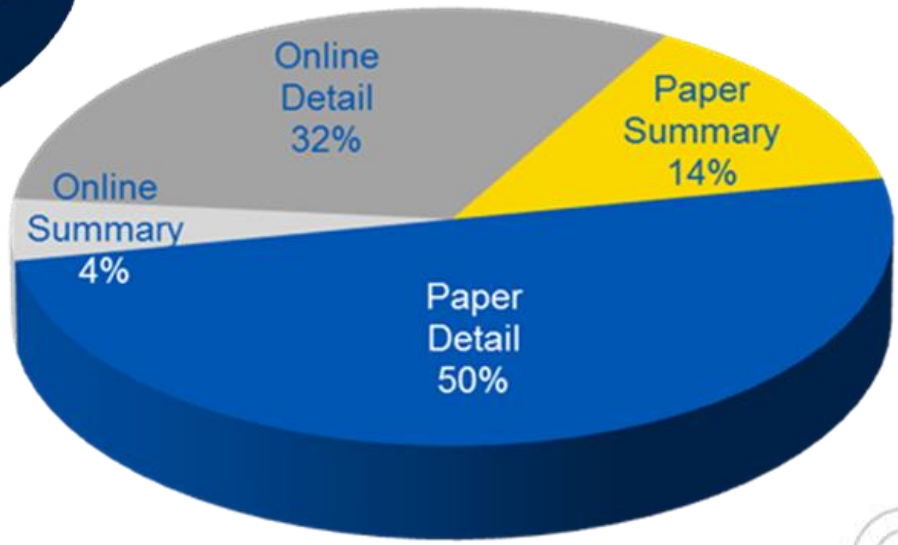


Future Vision:
Patrick Jackson – Google Glass

Rapid advances in today's wearable computing devices indicate the future may not as far away as we imagine

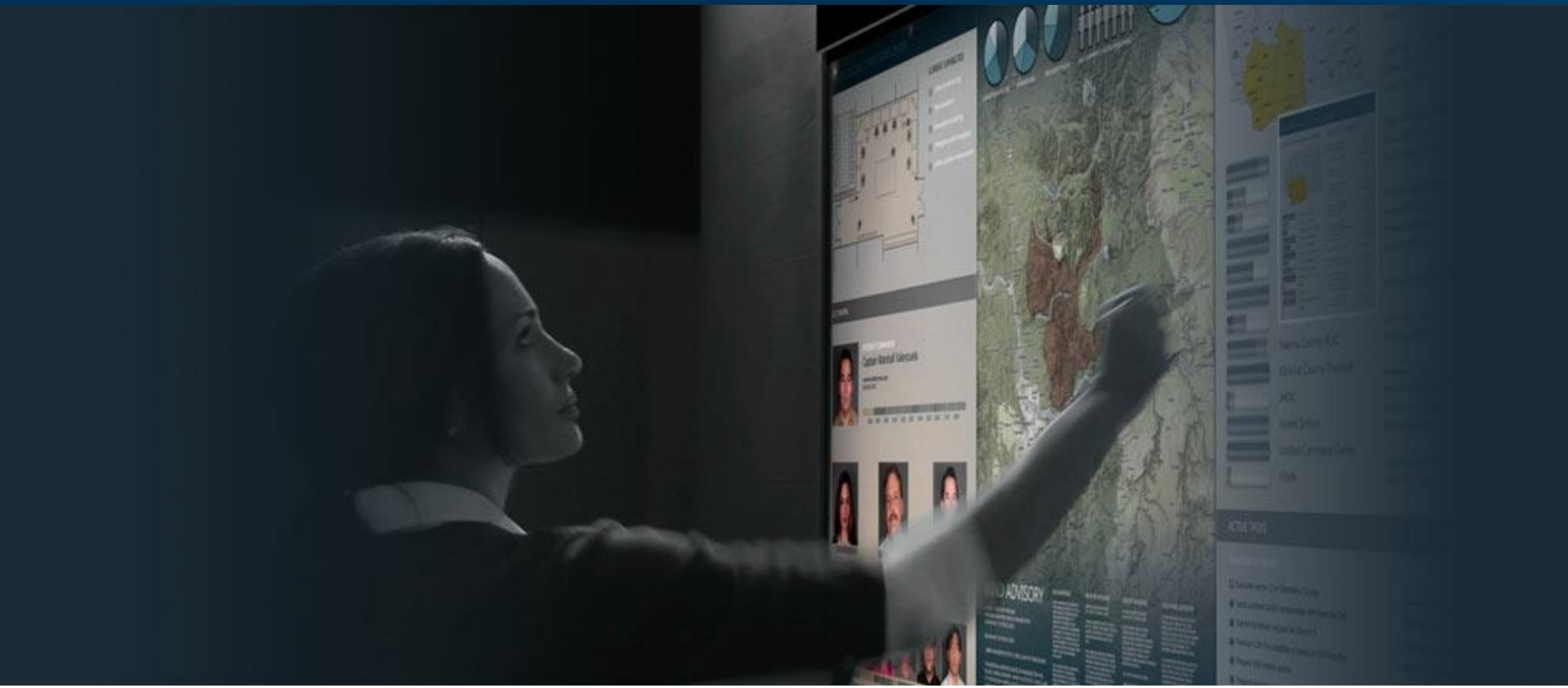
Survey Reported Rate Structures and Billing Formats for Commercial Wireless Service





Future Vision:
Emergency Medical Response

Vision of the Future



DHS Command, Control and Interoperability Division Basic/Futures Research program has developed a compelling video to illustrate broadband' s potential within emergency management.
Precision Information Environment (PIE)

Thank You

www.firstnetinoregon.org

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FirstNet and Broadband Data Migration alongside Public Safety LMR Systems

Steve Devine, Missouri Statewide Interoperability Network

APCO 2014, New Orleans LA

The impact of mobile data on LMR systems previously…

- The introduction of mobile data has reduced the level of required voice communications in many communities.
  - Many agencies noticed a reduction in voice traffic upon the introduction of mobile data capabilities (low speed) to their users in the field.
  - Will an evolution to broadband from low speed data with the introduction of FirstNet to public safety further reduce existing voice traffic from today's levels? If so, by how much?
  - Most would agree that there will always be the need for voice traffic by public safety regardless of the bandwidth available for data.

Factors that could impact the timeline/implementation of mission critical voice in public safety broadband.

- The current state (age, capacity, etc.) of an agency's LMR system may impact an agency's transition to mission critical PTT over LTE. Other factors could include:
  - The number of agency users.
  - Whether existing interoperability between neighboring agencies is impacted by such a transition by a single agency.

How the use of Non-Mission Critical PTT over LTE will benefit Public Safety

- It is anticipated that public safety agencies will be able to utilize non-mission critical PTT over LTE before they would **ever envision** their LTE devices providing mission critical voice to their users when a PTT over LTE standard is in place.
- This will provide users regular exposure to PTT over LTE functionality and will allow them to determine the quality and reliability of voice communications over LTE as compared to their existing LMR solutions.

Migration

- Everyone agrees that agencies will not migrate their mission critical voice communications to a broadband solution until:
  - They are confident the solution will meet their mission critical voice needs.
  - They have sufficient coverage within their jurisdiction to meet their mission critical voice needs.
  - Any broadband mission critical voice solution must be at least equal to their current mission critical voice solution.

Contact Information

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Standards – From P25 to LTE
Land Mobile Radio to Public Safety Broadband

Brad Stoddard
Director - Michigan's Public Safety Communications System (MPSCS)
Statewide Interoperability Coordinator (SWIC)

APCO 2014 Annual Conference

Migration or Augmentation?

- Focal points of adoption of P25 parallel to focal points of LTE adoption:
  - Ease of purchasing
  - Vendor competitive pricing
  - Less technical expertise
  - Consumer adoption
- Numerous public safety entities currently leveraging P25 and LTE
- Technology standards quick for enhancement, yet slow for adoption

Lessons Learned

- **Trust** – Base level of local government, state government, federal government, tribal partners and private partners; all have a comfort level of trust/distrust
- Policies and Procedures
- Governance
- Procurement
  - Application standards
  - Device Standards/Cost
- Upgrades
  - Communications
  - Subscriber
  - Applications

Partnerships

- Role of users and trust of provider
- Who is contacted for priority
  - Michigan has a Network Communications Center, single office for real-time talkgroup setup for incidents
  - FirstNet single office or deferred to states?
- Opportunities for those other than FirstNet
  - Portable/Mobile computing support
  - Application support
  - Shared use amongst public safety
  - Third party integrators/suppliers

Finances

- Technology available not equal to adoption
- Opportunity to reuse existing technology
  - Devices
  - Applications
- Existing investments compared to new investments
  - Tools for education for non-public safety
  - How technology adoption will enhance
  - Return on investment to worker efficiency
  - Up-front and long term costs
- Grant Opportunities
  - Incentives

Things to Remember

- What you use now will change
- What you use now will get better
- What you haven't thought of, someone else will
- It will be a magnificent growth for public safety technology
- Now is the time to get motivated, the evolution is now
- Plan now for what you need tomorrow

Contact Info

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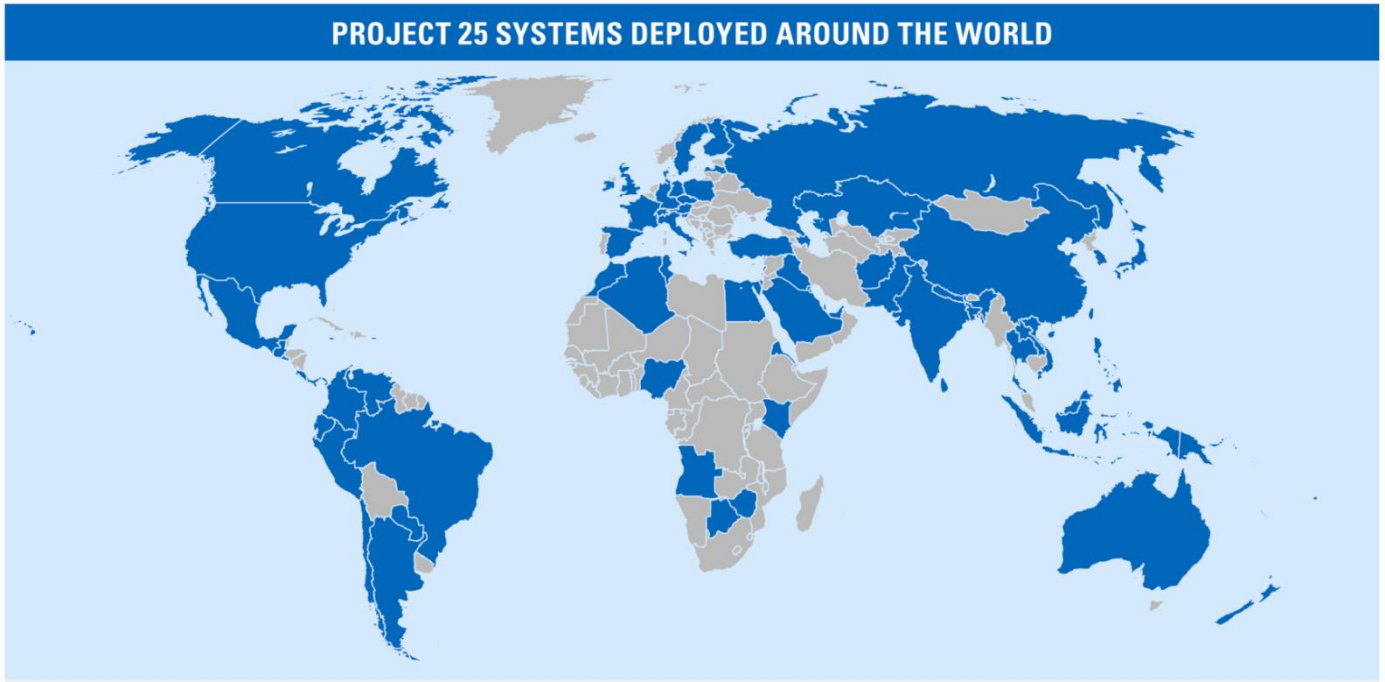
Find us on the web@ MPSCS – Michigan's Public Safety Communication System
http://www.michigan.gov/mpscs

Questions and Answers

Worldwide Adoption

Project 25 systems are deployed in 83 countries



Source: Project 25 Technology Interest Group (PTIG), July 2011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DATRON Performance You Require. Value You Expect.™
AIRWAVE
PowerTrunk
GME
etherstack wireless software
COBHAM
AEROFLEX
SPECTRA ENGINEERING
HARRIS
ARINC
rcs radio communication solutions
MIDLAND
MOTOROLA SOLUTIONS
PANTEL INTERNATIONAL
ICOM
EFJohnson TECHNOLOGIES We Respond.
MODUCOM
Vertex Standard
ZETRON
TELEX Radio Dispatch
CODAN RADIO COMMUNICATIONS
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AVTEC consoles you can count on
AECOM
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PROJECT 25 TECHNOLOGY INTEREST GROUP

OUR MEMBER ORGANIZATIONS AS APCO EXHBITORS ALSO SAY

THANK YOU

PTIG MEMBERS EXHIBITING

- AEROFLEX
- ANRITSU COMPANY
- AVTEC
- CASSIDIAN COMMUNICATIONS
- CATALYST COMMUNICATIONS TECHNOLOGIES
- CODAN RADIO COMMUNICATIONS
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