



Homeland  
Security



**SAFECOM**  
**Inaugural Industry Summit**

**March 23, 2006**

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## Introduction

**Seamless national public safety (PS) interoperability** depends on development and implementation of interoperability solutions based on the public safety community's expressed needs. The SAFECOM program supports collaboration between the public safety community and the technology industry as equipment is developed for inclusion in local and state interoperability-planning efforts across the Nation. The recent SAFECOM Industry Summit afforded SAFECOM and the public safety community a valuable opportunity to begin engaging with the telecommunications industry on critical interoperability issues. The summit provided a forum to discuss:

- Public safety's role with the SAFECOM program
- Understanding the public safety Statement of Requirements (SoR)
- How the development of standards will create opportunities for new public safety technologies
- How SAFECOM technology initiatives can be leveraged by industry to better align research, development and testing, and evaluation efforts with public safety communication needs

This report describes the events and accomplishments of the Industry Summit. SAFECOM appreciates the attention, and thoughtful input of those who attended. We hope you found the presentations, panel discussions, and question and answer sessions valuable and worthwhile.

On behalf of the program, we invite you to continue to partner with SAFECOM as it works to improve public safety response through more effective and efficient interoperable wireless communications. Our vision for public safety includes and relies on industry development of solutions based on public safety's expressed needs. Please visit the SAFECOM website at [www.safecomprogram.gov](http://www.safecomprogram.gov) for updated information, tools, and templates related to public safety communications interoperability.

Thank you for making the SAFECOM Inaugural Industry Summit an extraordinary success. We look forward to your continued participation in improving public safety communications and interoperability. To those who were unable to join us, we hope this report provides some insights about the program and opportunities for industry participation. We hope to see you at future SAFECOM-sponsored events.

SAFECOM, a communications program of the Department of Homeland Security (DHS) Office for Interoperability and Compatibility (OIC), works with its Federal partners to provide research, development, testing and evaluation, guidance, tools, and templates on communications-related issues to local, tribal, state, and Federal public safety agencies. OIC is managed by the Science and Technology (S&T) Directorate.

## Executive Summary

On March 23, 2006, the Department of Homeland Security's SAFECOM program hosted its Inaugural Industry Summit. The event drew an audience of more than 300 individuals representing several disciplines. These include: public safety, the communications industry, agencies of the Federal Government, state and local government agencies, industry associations, and standards development organizations (SDOs).

The goals of the summit were to provide industry with:

- An introduction to the SAFECOM vision and strategy for communications interoperability
- SAFECOM's perspectives on technology issues related to interoperability
- An opportunity to come together with public safety and discuss issues related to interoperability

The day began with "Public Safety View: Resources and Requirements of America's First Responders." Public safety panelists offered their experiences of working in a mission-critical environment without interoperable communications. Following this, Dr. David Boyd (Director of the Office for Interoperability and Compatibility) gave an overview of the SAFECOM vision and technical initiatives. The remainder of the day consisted of four panels; each provided informational presentations which were then followed by a question and answer session with the audience and panel members. The four panels were:

- Policy and Funding: Driving Forces for Interoperability
- Statement of Requirements (SoR) for Public Safety Interoperability: Public Safety Speaks
- Standards Development: Achieving the System of Systems Vision
- Compliance Assessment: Objective Quality Measures

The SAFECOM Industry Summit accomplished several goals. First, SAFECOM initiated a conversation on interoperability initiatives between industry, and public safety. Second, SAFECOM specified its role and vision in the pursuit of wireless interoperability: a coordinator between public safety, industry, and other Federal interoperability programs pursuing a system of systems approach based on public safety needs. SAFECOM also clarified the program's technical initiatives and its purpose and connection to interoperability. Third, the Summit provided industry with an opportunity to offer feedback during the meeting and after the meeting via the SAFECOM Web site ([www.safecomprogram.gov](http://www.safecomprogram.gov)).

## Industry Summit Agenda

- **Public Safety View:** Resources and Requirements of America's First Responders
- **SAFECOM:** Vision and Technical Initiatives
- **Policy and Funding:** Driving Forces for Interoperability
- **Statement of Requirements (SoR)** for Public Safety Interoperability: Public Safety Speaks
- **Standards Development:** Achieving the System of Systems Vision
- **Compliance Assessment:** Objective Quality Measures

## Opening Remarks



*Dr. David Boyd delivers the opening remarks of the day, as Industry Summit participants look on.*

Dr. David Boyd, Director of DHS OIC and Director of the SAFECOM program, welcomed participants with a brief description of SAFECOM:

- SAFECOM is a presidential management initiative through the Office of Management and Budget that is managed by the S&T Directorate. OIC is built around the mission and efforts of the SAFECOM program.
- As many attendees know, SAFECOM provides research, development, testing and evaluation, guidance and assistance for local, tribal, state, and Federal agencies, and works with other Federal public safety agencies seeking to improve public safety response through more effective and efficient interoperable wireless communications.

Dr. Boyd also described the purpose of the day:

- The purpose of this Industry Summit is to inform industry of SAFECOM's vision and initiatives related to the technical aspects of public safety wireless communications and interoperability.
- Additionally, it serves as an opportunity to network and share ideas with representatives of public safety, research and development organizations, industry, and government officials involved in the challenge of creating solutions to communications interoperability.
- We are very pleased that attendees could join us for what will be a very full day of presentations, discussion, and Q&A.

## Public Safety View: Resources and Requirements of America's First Responders

### Panel Purpose and Outcomes

The first panel of the day clarified the public safety first responder needs that industry can help meet and explained the public safety role in the SAFECOM vision for addressing the interoperability challenge. The panel gave industry:

- An understanding of the significant participation by, and support of, practitioners of the SAFECOM approach in meeting public safety's vision of interoperability
- An understanding of the various public safety environments
- An understanding of functional and technical requirements of public safety
- Clarity on funding issues affecting public safety purchasing decisions
- Insight into ways industry can support public safety needs

### Panelists



*Panelists (from left) Charles Werner, Eddie Reyes, Mark Reis, and Marilyn Praisner*

Panelists included leaders from the emergency responder community:

- **Marilyn Praisner**, *Vice President, Montgomery County Council; chair, SAFECOM Executive Committee*
- **Mark Reis**, *Deputy Director, Emergency Medical Services (EMS), City of New Orleans*
- **Eddie Reyes**, *Captain, Alexandria Police Department, Alexandria, VA*
- **Charles Werner**, *Fire Chief, City of Charlottesville, VA; Member, SAFECOM Executive Committee*



The presenters had several critical messages:

- The challenge of interoperability is being addressed by cross-government collaboration, driven by public safety and coordinated by DHS/SAFECOM
- There is an urgent desire at the Federal level for interoperability sooner rather than later, and significant changes are currently underway
- The optimal arrangement to achieve results is government and industry working in collaboration

*“We asked a police officer with his weapon and his radio laid out in front of him – which is more important? He surprised us by choosing his radio. He said he used his weapon one time in 15 years, but he uses radio everyday.” – Chris Essid, Commonwealth Interoperability Coordinator*





## Overview

- **Marilyn Praisner**, *Vice President, Montgomery County Council*
  - As local elected officials, we are held accountable for spending money. This holds true for county commissioners, council members, mayors, or city managers.
  - There are tremendous complexities and a myriad array of incidents in public safety, but the bottom line for me, for the first responders, and for you is the safety of our families, children, and the first responders who serve and protect us. We want to make sure that they have tools and capacity to respond, and respond safely.
  - We local elected officials need the input of the first responders before we make decisions. Public safety needs to be involved and engaged in the decision-making process.
  
- **Mark Reis**, *Deputy Director, EMS, City of New Orleans*
  - We need operability before interoperability.
  - We need a system of systems. We need interoperable systems in the regions that can back each other up.
  - We need open systems. We will build an open system as a region and tie it to a standards-compliant statewide system that meets public safety's requirements.
  - We believe in building partnerships with vendors, but when vendors sell us systems they need to realize that they are selling a system to the region.
  - We need to get away from having proprietary equipment.
  - Until we as a Nation are willing to commit to preparedness, we will continue to suffer the devastating effects of being only partially ready. I urge you to please do everything to make this a reality.
  
- **Eddie Reyes**, *Captain, Alexandria Police Department, Alexandria, VA*
  - When one municipality upgrades to a new system or a new version of the same manufacturer's radio, something that minor can erase the interoperability we've worked so hard to achieve, in part because there is no backwards compatibility.
    - "With the stroke of one pen, the interoperability we've tried so hard to achieve can be erased."
  - Radio programming needs to be simplified.
  - There needs to be full functionality across radio manufacturers.
  - We need improved data interoperability capabilities.
  - We need multi-band radio: dual-or tri-band radios.
  - We need ease of use for our systems.

- **Charles Werner**, *Fire Chief, City of Charlottesville, VA*
  - We're starting to cross the bridges and go across traditional boundaries between fire, law enforcement, and EMS. We're headed in the right direction.
  - Vendor products must work in the very unique environment of each community. They need to provide operability with:
    - Redundancy
    - Resilience
    - Reliability
  - The bottom line is that we need you vendors to understand and produce what we need.

## Q & A

**Q** Who else are you working with in your region - local, tribal, state, and Federal?

**A** Mark Reis: Region 1 comprises four parishes. We're hopeful that on June 1 we will be on the new system by working with the governor and the state police. We're working with our local partners, stepping out to the state region, and then stepping out to the Federal systems.

- We are taking the system of systems approach based on the regions. We are working with the Louisiana State Police and plan to create a regional system that hooks into the state (700 MHz). Our backups were our sister regions, but they also got wiped out. In Mississippi, they backed up their systems inland, so theirs worked. We didn't do that. Now, reachback will go 90 miles inland.

**Q** What is the cost/price point for the public safety community to use?

**A** Charles Werner: It will depend on what the functionality of the radios will be. Some have used satellite radios in the Mississippi region during Katrina response and recovery efforts. However, there is an order of priority on what is realistic and what is needed to function that determines what to purchase.

- It also gets back to economies of scale: Is every officer in the street going to use a satellite radio?

**Q** Do you have a perspective on the use of satellite radios? Have you considered using or have you used meshed topology networks? What about software-defined radios?

**A** Eddie Reyes: With respect to satellite, meshed networks, and software-defined radios, the National Capitol Region (NCR) has taken a look at those solutions. Software-defined radios are not ready for use by public safety.

- Satellite and meshed topology can be cost-prohibitive as solutions.

**A** Charles Werner: Because of cost, only a few [satellite] radios are available for the commander level, so that begs the question of how information will get to the field personnel in the event of an incident.

- Congress suggested a \$200 million study on back-up systems. Why? We don't even have our primary systems up and running. Expanding satellite radio use is still cost-prohibitive.

## SAFECOM: Vision and Technical Initiatives



*Dr. David Boyd briefs the audience on SAFECOM's vision and technical initiatives.*

### Panel Purpose and Outcomes

This presentation by Dr. David Boyd, Director of OIC and the SAFECOM program, informed industry of the specific purpose and principles of SAFECOM and established for the audience the connection between SAFECOM, public safety, and the technical initiatives that SAFECOM drives. Dr. Boyd also provided clarity on specific technical initiatives SAFECOM is pursuing and discussed SAFECOM's recent successes.

### Overview

#### SAFECOM Program

- SAFECOM is a presidential management initiative established by the Office of Management & Budget, and approved by the President's Management Council. SAFECOM is a communications program within OIC, which is managed by the S&T Directorate. SAFECOM was created to address the public safety communications issues identified by the National Task Force on Interoperability (NTFI). These include:
  - Incompatible and aging communications equipment
  - Limited and fragmented radio spectrum
  - Limited and fragmented budget cycles and funding
  - Limited equipment standards
  - Limited and fragmented planning and coordination
- SAFECOM is one element of the DHS strategy to address interoperability. The program works with its Federal partners, such as the Office of Grants & Training, to provide research, development, testing and evaluation, guidance, tools, and templates on communications-related issues to local, tribal, state, and Federal public safety agencies.
- This conference will focus on the SAFECOM element of the DHS strategy.

#### Practitioner-Driven Approach

- As a public safety practitioner-driven program, SAFECOM works cooperatively with more than 60,000 local and state public safety agencies.

- SAFECOM makes it possible for the public safety community to leverage resources by promoting coordination and cooperation across all levels of government.
- More than 90 percent of the public safety communications infrastructure in the Nation is owned and operated at the local and state level.
- Keeping this statistic in mind, it is logical that any successful effort to improve public safety interoperability must include the voices of first responders who are on the front lines in large, small, rural, and urban communities across this Nation.
- The quality that differentiates SAFECOM from initiatives with similar missions is that it is driven from the local level. The program appreciates the value of an interoperability effort that is designed by public safety, for public safety.

### **Long-Term Vision and System of Systems**

- A system of systems is public safety's stated long-term vision: standards-based, practitioner-driven, and allowing first responders to communicate freely across jurisdictions, with their own equipment, on relatively short notice, and with limited effort.
  - SAFECOM's long-term strategy is to build that system of systems to join separate agencies through interface standards and a set of compatible procedures and training.
- There are several critical initiatives SAFECOM is currently driving. We will be speaking about each of these in detail during the panel discussions:

### **Statement of Requirements (SoR)**

- Developed with public safety practitioner input, the SoR defines the operational and functional requirements for public safety communications.
- The SoR is the first document that captures, in one place, a comprehensive set of communications requirements.
- The SoR helps the public safety community convey a shared and vetted vision that ultimately will help private industry better align research and development efforts with critical interoperable communication needs.
- Version 1.0 of the SoR was developed in 2003 and published in March 2004.

### **Interoperable Communications Standards**

- Standards development for public safety telecommunications interoperability is centered on satisfying user needs delineated in the SoR and provides:
  - Functional overviews and specification standards with the technical details needed to develop interoperable products
  - Compliance assessment standards to verify conformance, performance, and interoperability within and among products
- The primary purpose of developing open standards for public safety applications is to:
  - Ensure interoperability between products from different vendors.
- Interoperable standards open markets for private industry by making every public safety agency a potential customer, regardless of past purchase history.

### **Compliance Assessment**

- SAFECOM is also working with the National Institute of Standards and Technology (NIST) and the Department of Justice to conduct a Project 25 (P25) compliance assessment program.
- Compliance assessments provide opportunities for industry by:
  - Increasing trust of public safety in products they purchase and the companies that sell them
  - Providing object demonstrations of quality
  - Decreasing costs by catching defects early

### **Policy and Funding: Grant Guidance**

- We'll be speaking next about Federal and state policies that are in part creating the direction for achieving interoperability among first responders. These forces affect and support the SAFECOM mission to achieve public safety interoperability.
- Organizations that pay attention to the direction these forces move can position themselves to support the critical achievement of public safety interoperability, and serve their bottom line as well.
- One of the more powerful forces developing steam is grant guidance.
  - SAFECOM has provided common grant guidance to Federal agencies to assist in planning and implementing the public safety community's interoperability solutions. Grant guidance provides Federal grant dollar criteria to avert the creation of public safety communications system stovepipes at the local and state levels.

*There are two other major undertakings of the SAFECOM program that we will not be presenting today. They are scheduled for release this year, and are as follows:*

### **National Interoperability Baseline Survey**

- The Survey provides a qualitative understanding of the current state of public safety interoperable communications across the Nation.
- The Survey includes operational, governance, and technical considerations.
- The Survey offers a yardstick to identify and drive investment needs, and serves as an integrated component of SAFECOM's approach to interoperability.
- SAFECOM is conducting the Survey to:
  - Determine the capacity for interoperable communications among law enforcement, fire, and emergency medical service agencies across the Nation.
  - Establish a process and mechanism to make it possible for agencies to measure communications interoperability on a recurring basis.
  - Generate data to help public safety officials make better-informed decisions about how to most effectively allocate resources for improving communications interoperability.
  - Gather information that can be used to guide and measure the effectiveness of future communications interoperability-improvement efforts implemented by local, tribal, state, and Federal public safety organizations.

### **Public Safety Architecture Framework (PSAF)**

- The purpose of the PSAF is to develop and validate a working architecture framework, corresponding data model, and supporting web-based tool that public safety agencies across the Nation can use to characterize the state of their present telecommunication

systems, and determine what is necessary to achieve levels of interoperability with other systems and agencies.

- The requirements delineated in the SoR guide the development of the PSAF:
  - The SoR forces the public safety community to analyze what they have now (the “as-is” state) and where they want to go (the “to-be” state).
  - The architecture framework outlines *what* the overall structured approach is for getting there (that is, facilitating interoperability) and, through the details of this structure, indicates *how* the architecture (and its components) will operate through the development of interface standards.
- The PSAF provides rules and guidance for developing and presenting architecture descriptions. It does not dictate a nationwide architecture that requires large-scale replacement of existing systems by public safety agencies.
- The PSAF has four primary uses:
  - Provide the process and tools for the planning of interoperable communications and information sharing among public safety agencies.
  - Assist in identifying non-interoperable areas among legacy and future architectures.
  - Protect capital investment in legacy communications systems while in transition to the SoR future state of a “system of systems”.
  - Shorten product lifecycle by leveraging Commercial Off the Shelf (COTS) equipment that adheres to the SoR.
- As with the SoR, manufacturers that educate themselves with respect to the PSAF can take advantage of targeting their research and development, as well as sales.



## Policy and Funding: Driving Forces for Interoperability

### Panel Purpose and Outcomes

This presentation discussed existing and pending policy and funding vehicles that define current government approaches to wireless interoperability. Panelists identified the impact of these policies on public safety buying decisions, including:

- Multiple policy forces supporting interface standards
- Forthcoming grant-guidance policies and their impact on buyer behavior
- How SAFECOM methodologies, Federal policies, and grant guidance are affecting state and local buyer behavior

### Panelists



Panelists (from left) Chris Essid, Alecia Webb-Edgington, Scott Kelberg, and Dr. David Boyd

Panelists included:

- **Dr. David Boyd**, *Director, Office for Interoperability and Compatibility (OIC)*
- **Scott Kelberg**, *Division Director, Technical Assistance Division, Office of Grants and Training (G&T)*
- **Alecia Webb-Edgington**, *Director, Kentucky Office of Homeland Security (KOHS)*
- **Chris Essid**, *Commonwealth Interoperability Coordinator, Commonwealth of Virginia*

## **Overview**

### *Urgent Pursuit of Interoperability*

- Interoperability being demanded by Congress. It is happening NOW.
- Examples of policy-driven interoperability efforts:
  - Accelerate P25 standards:
    - Conference report to the FY 2006 Science, State, Justice, and Commerce Appropriations Act
  - Conduct P25 equipment compliance assessment:
    - Conference report to the FY 2006 DHS Appropriations Act
  - Tie state plans and strategies to grant funding:
    - Tactical Interoperable Communications Plan
    - SAFECOM grant guidance (encourages use of P25 standards where practical)
    - FY 2007 – G&T grants will require state plan.
  - Make spectrum available for public safety:
    - Deficit Reduction Act of 2005 (makes spectrum available effective February 18, 2009)
  - Provide interoperable communications grants through National Telecommunications and Information Administration (NTIA):
    - Deficit Reduction Act of 2005 (provides \$1 billion in grants)

### *DHS Accomplishments*

- Guidance:
  - Statement of Requirements (SoR)
  - Statewide Communications Interoperability Planning Methodology
  - Communication Grant Guidance
  - Interoperability Continuum and Operational Guide
  - National Interoperability Baseline Survey
  - Tactical Interoperable Communications Plan (G&T)
  - Public Safety Architecture Framework (PSAF)
- Technical Assistance:
  - Interoperable Communication Technical Assistance Program (ICTAP) (G&T)
  - Statewide planning processes in three states: Virginia, Nevada, and Kentucky (SAFECOM)
- Interoperable Communication-Related Funding:
  - \$2.1 billion provided by DHS for interoperable communications-related expenditures between FY 2003 and FY 2005
  - More in 2006

Impact to industry will be felt as early as 2006.

Organizations that pay attention to the direction these forces are moving can position themselves to support the critical achievement of public safety interoperability, and serve their bottom line as well.

## Q & A

- Q** I have worked with communities that have heard different stories about the requirement to buy P25. They understand the need for shared, standards-based systems but sometimes cannot afford more and are concerned that they have to always buy P25. They have consultants that say they need a new P25 system that costs only \$49 million because they'll need to have 23 new sites? Do you have to buy P25? Clarify the grant guidance requirements for purchasing P25-compliant equipment.
- A** Scott Kelberg: We [G&T] look to SAFECOM for anything that relates to standards and grant guidance.
- A** Dr. Boyd: There have been some cases in which local salesman have suggested that if you are not going to P25 there will not be grant dollars available for you.
- SAFECOM recognizes that in some cases there are compelling reasons not to use P25, and that's why flexibility is in the grant guidance. We understand that sometimes a Chevrolet, not the Cadillac, is the way to go with a purchase. When things like that come up, local communities are encouraged to seek clarification from SAFECOM, the Office of Grants and Training (G&T) and the grant guidance.
- A** Chris Essid: In Virginia, the state was looking at what made sense for communities on a case-by-case basis and encouraged the use of open architecture.
- A** Alecia Webb-Edgington: In Kentucky, 70 percent of communities are on an analog solution, so Kentucky cannot simply throw that out and go to a P25 replacement system. We stay flexible and reference the strategic initiatives in our strategy to guide our decisions.
- Q** I hear a lot about P25 as an open architecture, but I don't understand that when P25 is a closed architecture of proprietary nature. How do you plan to use P25 when it is a popular protocol, rather than an open architecture?
- A** Chris Essid: We did not abandon industry. We've gone forward, but now we do have a strategic plan. We can bring in industry in a way that would add value. We have increased our understanding about the many layers of P25. It is a very valuable thing, but just because one radio is P25 doesn't mean that it will be able to talk to another P25 radio.
- Systems exist and/or are being built, so we're trying to work around all those things. We look at P25 as something that will add a lot of value, but we are not going to lay all of our investments on the development of P25.
- A** Dr. Boyd: Two points: P25 is a non-proprietary open architecture and a system of systems. P25 describes one type of system. There are other systems out there, and we don't want a standard that is too rigid.

## Statement of Requirements (SoR) for Public Safety Interoperability: Public Safety Speaks

### Panel Purpose and Outcomes

This panel discussion clarified the purpose and intention of the Statement of Requirements (SoR) for public safety communications and interoperability and provided details of its current and future value. The discussion built on awareness of the fact that: 1) the SoR was developed by public safety practitioners; and 2) public safety and SAFECOM share a vision of the SoR as a driving force for future wireless communications product development. The panel also stressed the SoR's impact on standards development and grant-making.

### Panelists



*Panelists (from left) Andrew Thiessen, Craig Jorgensen, and Harlin McEwen*



*Panelist Dereck Orr*

Panelists included:

- **Dereck Orr**, Program Manager, National Institute of Standards and Technology (NIST), Office of Law Enforcement Standards
- **Harlin McEwen**, Chairman, Communications and Technology Committee, International Association of Chiefs of Police (IACP)
- **Craig Jorgensen**, Project Director, Project 25 (P25)
- **Andrew Thiessen**, Electronics Engineer, National Telecommunications and Information Administration (NTIA), Institute for Telecommunication Sciences (ITS)

## Overview

- SAFECOM is leading a coalition of government programs and public safety organizations to develop the public safety SoR.
- The SoR is a technology-independent view of public safety communications needs to support day-to-day as well as large-scale emergencies for first responders. It represents an ideal picture of how public safety wants to communicate with an understanding that standards-based technology is not available today to support all of the needs specified.
- Currently, the public safety SoR is being harmonized with other organizations, including the National Public Safety Telecommunications Council (NPSTC), working groups (P25/34) and the Steering Committee.
- The current public safety SoR defines the basic functional and operational requirements for public safety communications. Future public safety SoR updates will provide detailed technical data regarding quantitative and qualitative requirements.

## How do we read the PS SoR?



### Operational Requirements

*"Who talks to who"*

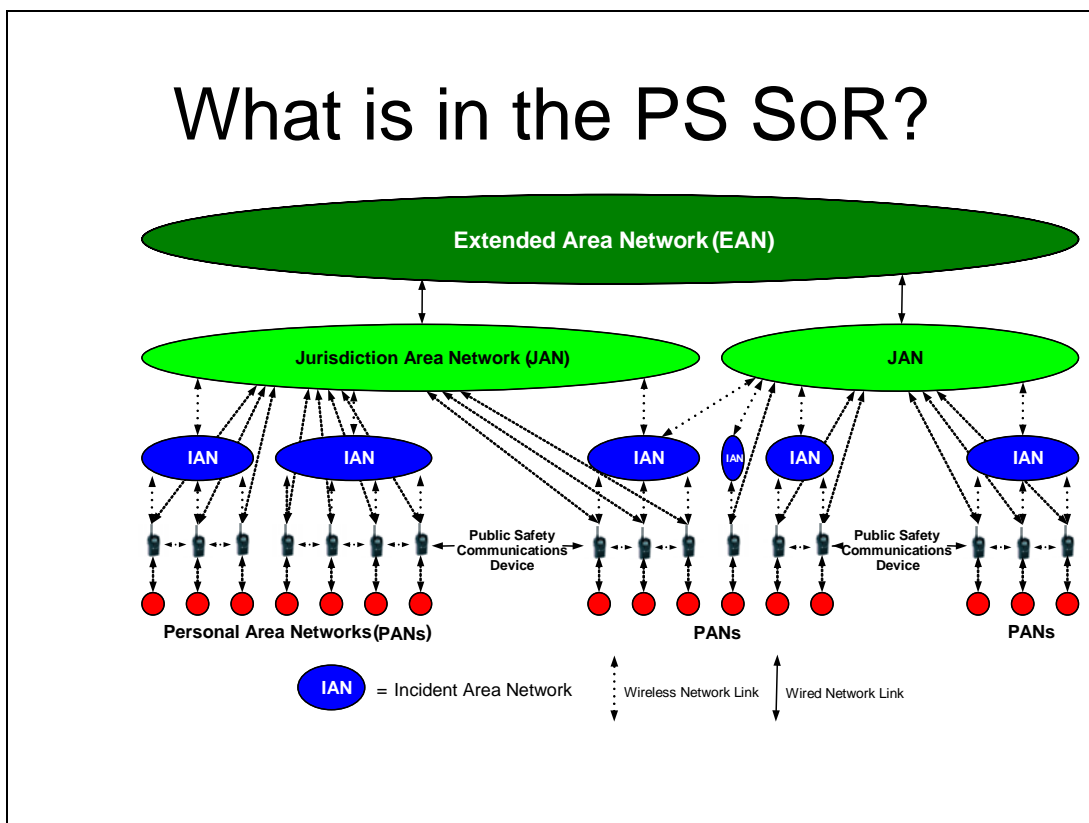
- Why
- How
- When
- What



### Functional Requirements

Applications/Services  
Devices  
Network Performance

- The SoR provides a single point of reference for public safety requirements that will result in a product that public safety can be confident will address the needs of a particular agency.
- The public safety SoR can be used to inform future product development decisions.
- Industry support is needed and wanted. A feedback mechanism to the SoR is currently under development and all industry input will be considered.



## Q & A

- Q** I am the public safety liaison for my company. I've heard concerns regarding voice quality (specifically conveying the excitement in someone's voice) as radios are going to digital platforms. Have you heard that concern? Is the new edition of the Statement of Requirements going to address that concern?
- A** Andrew Thiessen: What you're talking about is the tonal harmonic distortion, which isn't part of the subjective voice testing we've recently done in the lab. It will, however, be reflected in subsequent versions of the SoR. I've heard that it is more important to public safety first responders that they be able to decipher the tone of the speaker than it is to know who the speaker is. Some practitioners lower the volume just enough to hear the tone.
- A** Craig Jorgensen: In P25 Phase 2, we are still testing and comparing vocoders and how they impact the sound you get out of the transmitter, receiver and/or the demodulator.
- When you buy Phase 1 equipment, make sure you get the enhanced vocoder version that is optionally available in today's technology.
- Q** I get beat up a lot by the P25 proponents and opponents. Which is better—digital or analog? And what's being done to possibly notify first responders when they are going to lose their signal?
- A** Craig Jorgensen: The P25 SoR states that the digital technology has to be equivalent or nearly equivalent to analog. Digital is 1s and 0s and when you're traveling around you're still getting the good signals.
- Digital provides a very "good" signal, but analog has slightly better coverage. That doesn't mean one is better than the other because the additional coverage is often garbled.
  - It is important to talk about those issues because the Department of Interior (DOI) and the agency you represent are working out west to test and validate questions and issues.
  - With regard to fire fighters in building coverage, there have been tests conducted on portables and building coverage by the City of Phoenix and those tests indicate that analog portables give them better signals (coverage) in buildings. Test methodology has not been verified.
  - The City of Phoenix Fire Department adopted the policy of using the conventional mode (not trunk mode) of their digital system for on-scene communications.
  - In-building coverage and with respect to firefighters: Tests done by the City of Phoenix show that while digital signal is higher, the portable analog signal audio quality appeared better than the digital portable audio quality. This was not done in a lab test.
  - We haven't resolved this question yet, but we are still working on it.



- Q** What role does the P25 standard have in the system of systems future?
- A** Craig Jorgensen: We believe that if we are going to have a graceful migration path, we have to ensure that our system can migrate from the smallest system to the largest system.
- We have to operate under the assumption that we need to integrate with cell phones, satellites, and Radio Frequency-controlled (RF) computer systems of the future.
  - The system of systems (described in the SAFECOM SoR) is sometimes viewed as a “super system of systems” (that is, it covers multiple bands).
  - We (P25) use the Interface-RF Subsystem Interface (ISSI) to provide the major interface services between the various P25 platforms.
  - Planning is necessary that describes how the systems are going to relate to each other
  - The Inter-RF Subsystem Interface that we are developing in P25 will provide transparency within the system and outside the system, but we are not going so far as to develop that definition of what can or should exist outside that system.
- A** Dereck Orr: The SoR is the common basis by which public safety can begin a conversation with industry about what standards are needed and what standards still need to be developed.
- SoR is not intended to lead to the development of all new standards.
- Q** Has any thought been given to the point where we have a conflict of system identifications (IDs)? Do we need to go to a system of area codes or IDs like the phone company?
- A** Harlin McEwen: From a practical point of view, the capability of having IDs is one issue. Some radios have the ability to have digital displays, but the product varies from vendor to vendor with some having more numbers than others.
- Public safety recommended that some kind of ID system be put in place. The Federal Communications Commission (FCC) is reluctant to get into the arena. Without a mandate for it, standardization won't happen.
- A** Craig Jorgensen: You have the capability today to do it. It's not a technical issue. But somebody is going to have to keep and manage the records. The issue is that there would have to be a huge administrative process that will be burdensome to make it work. In fact, in the late 1990s, we considered several proposals to address this issue but were unable to determine who would pay for it or if the need exceeded the cost.
- We are well aware of the problem that exists where people are not having the same channel nomenclature.

## Standards Development: Achieving the System of Systems Vision

### Panel Purpose and Outcome

The standards development panel discussion revolved around public safety's view that interoperability is best achieved through interface standards. It also emphasized that SAFECOM is committed to working with standards development organizations (SDO) and industry to establish practical and effective standards as quickly as possible. The panel provided the following insights:

- A system of systems requires interface standards
- Clarity was offered on the vision and migration path for interface standards
- SAFECOM wants to work with industry to leverage existing standards processes and involve industry in the standards effort through SDOs
- Standards can add value in R&D planning

### Panelists



*Panelists (from left) John Oblak, Eldon Haakinson, and Dereck Orr*

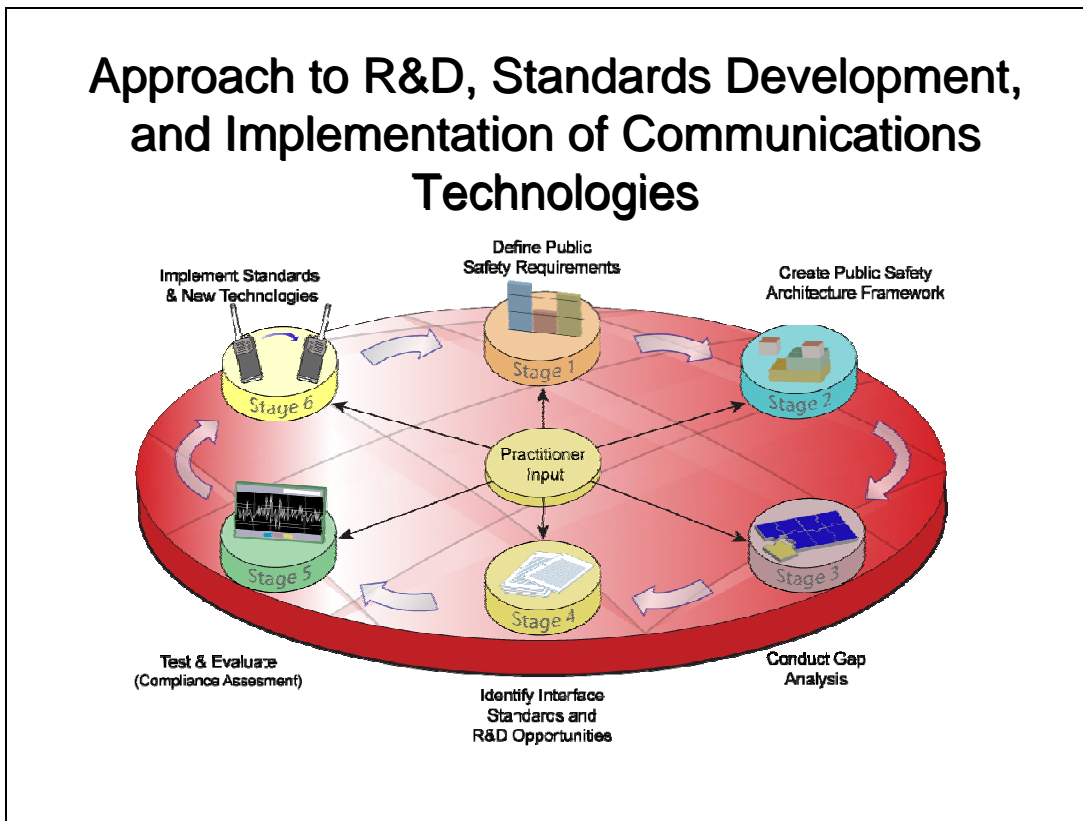
Panelists included:

- **Dereck Orr**, Program Manager, National Institute of Standards and Technology (NIST), Office of Law Enforcement Standards
- **Eldon Haakinson**, Electronics Engineer, formerly with National Telecommunications and Information Administration (NTIA), Institute for Telecommunication Sciences (ITS)
- **John Oblak**, Chairman, TR-8 Standards Committee, Telecommunications Industry Association (TIA), EF Johnson Representative

## Overview

### Process

- Public safety practitioners and agencies define communications and information-sharing **requirements**.
- Public safety agencies describe the **framework** (system of systems) to support requirements.
- Organizations evaluate existing technologies and conduct **gap analysis**.
- Public safety agencies partner with industry to adapt or develop **standards** to close the gaps.
- Organizations test and evaluate products and services to ensure **compliance** with standards and requirements.
- Public safety practitioners and agencies develop new or modified requirements based on needs and mission.



### **Roles**

- Public Safety Practitioners – Define their operations and requirements, select the technologies, accept the standards, and implement the systems and applications.
- Industry – Suggests the solutions, adapts or develops the standards, provides the products.
- SAFECOM – Assists the practitioners/industry relationship, funds research and development to close gaps, structures the grant guidance.

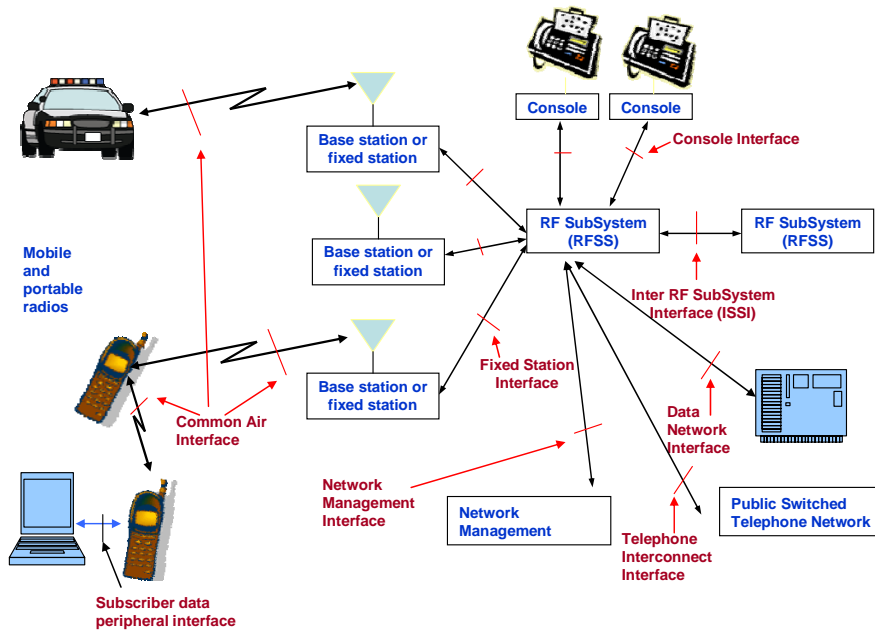
### **Principles**

- Leverage existing Standards Development efforts through SDOs and non-traditional SDOs.
- Encourage commercial and consumer COTS products and standards with public safety adaptations.
- Provide for backward compatibility to legacy systems and migration to the vision.
- Create the “critical few” standards necessary – at the major interfaces (not within the equipment or applications).
- Seek Open, Consensual, Voluntary Standards.
- First and Last – draw on PUBLIC SAFETY practitioners and agencies!

### **Development of National Voluntary Consensus Standards for Public Safety Communications**

- Interface Standards
  - Provide broadest impact on interoperability.
  - Allow systems of multiple public safety agencies to be interconnected.
  - Allow equipment of multiple vendors to be interconnected.
  - Allow applications and services of multiple providers to be interconnected.
  - Define modulation, access methods, signaling, and protocols of wireless systems.
  - Define signaling, protocols, and controls of wireline systems.
  - Define formatting, structure, protocols, and data definitions of data systems.
  - DO NOT define internal operation and technology of systems.

## Example of System Interfaces Project 25 System



## Q & A

- Q** The panelists representing public safety mentioned standardized batteries, problems with programming (interface and system levels), and over-the-air programming—can you talk through some of those problems?
- A** John Oblak: P25 defines specific open standard interfaces. Those things that dealt with specific design decisions were left up to the manufacturers. The standards were never taken to a point where batteries and the like were made requirements. However, there are a number of interface points that are standardized, for example, mobile application. As features are desired, they can be put into the standards, but going too far in that direction may stifle the innovation that occurs between manufacturers.
- We did hear that the public safety community would like to have interoperable batteries. To some extent, manufacturers have certain accessories in common with some options available.
- A** Eldon Haakinson: During ITS's laboratory testing of P25 radios, we have encountered problems with some P25 equipment that was stated by the vendor to be compliant with the P25 standards. A presentation by Eric Nelson of ITS later today on compliance assessment will further discuss those findings.
- An additional concern relates to the fact that all radios are different from a programming point of view. An over-the-air program is probably the best in the long run but P25 hasn't yet addressed it.
  - Some radio programming implementations use a Windows environment, some use a DOS environment. They all are different from a radio programmer's point of view and have different complexities.
- Q** The commercial wireless industry has been hugely successful in fostering seamless interoperability for its users across devices, infrastructures, and with backward compatibility. So far, P25 has not yielded similar benefits. Why? What is needed to make this succeed?
- A** Eldon Haakinson: The commercial wireless cell phone companies can bring new products and new technologies together much more quickly. The carriers can make use of a variety of access methods, such as TDMA, CDMA, as well as providing an analog option. Public safety has requirements that are unique to our disciplines and community, such as keeping vocoder voice in the same format and keeping encryption all the way through the system.
- Q** Why can't we as a public safety community benefit in the same way?
- A** Craig Jorgensen, (*SoR panelist, answering from the audience*): The cell phone service providers are established to serve their customers and make a profit. We have to provide radio service to our customers even though we can't get a profit.
- Companies don't approach governments with a *pro bono* number-one priority. I don't have a problem with commercial technology. If Lucent has something to offer, they should offer it as part of the P25 process. Leveraging or accepting the technology is not the problem, but the company has to step to the table and satisfy the user needs.

- Q** From a government perspective, should we define “responder” beyond the traditional first responder (for example, the Red Cross)? The Telecommunications Industry Association (TIA) does private radio standards. Aren’t there others (private entities) who would want to put in a P25 system?
- A** Eldon Haakinson: To those who want to get involved in the standards development, they are invited. We took an initial look at traditional first responders, but we know that there will be others (for example, utility representatives, railroads, the National Guard, and so on). We went to first responders first because they will be at almost all incidents. We will look at other sectors/responder levels in future SoRs.
- A** John Oblak: Interestingly enough, for responders in the private sector just as much as in public safety, they look at their radios with as much care as does the public safety community. They are their lifeblood.
- Railroads and others have come to the table and expressed interest in using P25 technology in their applications. They understand the importance of interoperability and view it as a very similar type of application. And TIA does more than public safety and P25.
- Q** Railroads had been actively involved and they are indeed moving toward P25 as their solution. As for Lucent, the interoperability they have is largely due to their make-up of having network-based solutions. We have a requirement to talk unit-to-unit without that supporting infrastructure. That’s a huge difference from commercial services. Many agencies are defaulting to commercial services when it makes sense, for performance and cost benefit. Would you comment on the difference between open standards? And equivalent audio performance?
- A** John Oblak: What do we call an open standard? We view the standards in P25 as open standards—available to anyone to pick up and use. That’s not to say that there are not proprietary enhancements associated with those standards. For example, vocoders are a patented technology that are applied in P25 systems and licensed from the owner. Are they Intellectual Property Rights (IPR)-free? No, and they’re not open source. They are not open source in terms of you can find the source code, but you can find a detailed description.
- Q** Can you talk about the performance difference between the analog and digital systems?
- A** Eldon Haakinson: You can determine what signal-to-noise ratio (SNR) at a particular radio frequency (RF) will give you 12-decibel SINAD (Signal-to-Noise And Distortion) for analog and 5 percent bit error ratio (BER) for P25 digital modes. When the SNR gets to the threshold of 12-dB SINAD for analog or 5 percent BER, the analog and P25 digital should give about the same performance with about the same coverage. The goal of the original effort was that you could take out an analog system and put in a digital and have the same results.
- Q** What was the success criteria used for P25 development? What are the lessons learned from P25 to share with future standard-setters?



- A Dereck Orr: The key success criteria and completion marks were put together by all industry participants. At first, industry identified the standards interfaces that they felt were completed, but they didn't allow a common enough interpretation for each one of those interfaces. (Vendor-specific implementations of certain P25 interfaces were presented in a separate column). We said that column shouldn't count because that wasn't the intent of P25. They were developed to the specifications, as understood by the manufacturers. Practitioners wanted a common implementation of the standards.
- A Craig Jorgensen (*SoR Panelist, answering from the audience*): It was a matter of perception. Public safety said, and industry agreed, that the understanding of industry of the standards was not precise enough, and we need precise language to avoid interoperability issues. Industry ultimately agreed with us. Documents need to speak for themselves.
- There is still an obligation by TIA to get a shared understanding of what the progress has been since November.
- Q One lesson learned is that if you do standards well and you do them right, it will take time. If you include practitioners and industry, the result will be better.
- A Eldon Haakinson: Yes, but development time is critical to the users of the standards. The International Telecommunications Union (ITU), a part of the UN responsible for developing international telecommunications standards, was on a four-year standards development cycle. They discovered that the users of the ITU standards would look elsewhere if the ITU did not speed up its standards development cycle. The point is that we as technology promoters and industry involved in standards development have to have timelines to develop products, or we are going to have customers walk away from us. The quicker we can turn around standards, the better we can stick to our milestones and the more customers we'll retain.
- A Dereck Orr: This is our first industry summit. Manufacturers are always looking to show what their potential solutions are. Where true interaction is going to occur is in bodies like the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and TIA, where companies will have to fight it out and convince the practitioners, not one government employee.
- Q One of the issues among user agencies is around the interfaces. Can you tell the audience how interchangeable the interfaces can be and what part of the system remains proprietary?
- A John Oblak: The intent of the fixed station was not necessarily to be a universal station for every application. In its first cut, the fixed station interface is looking at applications that are primarily conventional. Whether we'll have a mix and match with a trunk system is still a question.

## Compliance Assessment: Objective Quality Measures

### Panel Purpose and Outcome

The compliance assessment topic discussion defined for industry SAFECOM's vision of compliance assessment, its current state, and the process by which it will unfold in the future. The panelists outlined the difference between compliance assessment and conformance testing; public safety's need and desire for compliance assessments to achieve reliable interoperability; SAFECOM's support of the compliance assessment process being developed (P25) and its use as a model for future processes; the future connection between funding and compliance measures; and the value compliance assessment brings to industry.

### Panelists



*Panelists (from left) Eric Nelson, Gordon Gillerman, and Andy Davis*



*Panelist, Dereck Orr*

The panel discussion included:

- **Dereck Orr**, Program Manager, National Institute of Standards and Technology (NIST), Office of Law Enforcement Standards
- **Gordon Gillerman**, Conformity Assessment Advisor, National Institute of Standards and Technology
- **Eric Nelson**, Electronics Engineer, National Telecommunications and Information Administration (NTIA), Institute for Telecommunication Sciences (ITS)
- **Andy Davis**, Motorola Representative to Project 25 (P25), P25/Telecommunications Industry Association (TIA)

## Overview

### Definition of Conformity Assessment

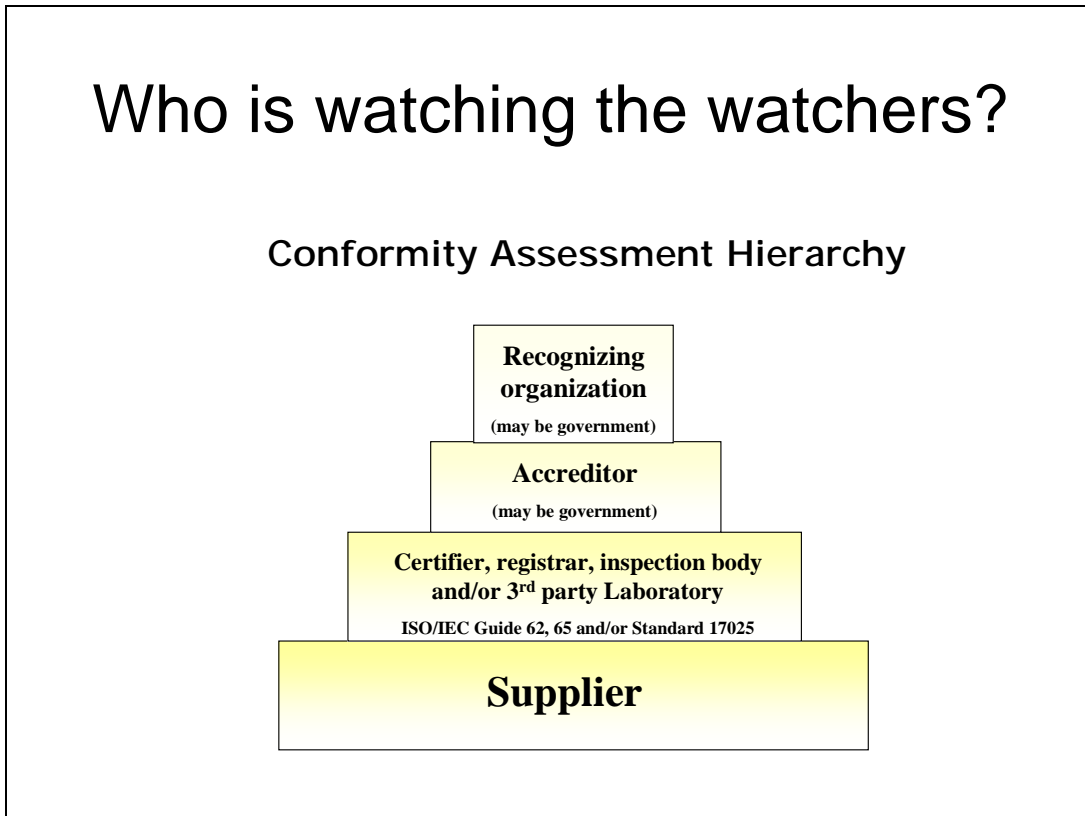
- “Any activity concerned with determining directly or indirectly that relevant requirements are fulfilled” – ISO/IEC Guide 2

### *Types of Conformity Assessment*

- Supplier’s Declaration
- Inspection
- Testing
- Certification
- Registration
- Accreditation

### Involved Parties

- *First Party* – Seller or manufacturer
- *Second Party* – Purchaser or user
- *Third Party* – An independent entity that has no interest in transactions between the first and second parties
- *Government* – Has a unique role in regulation, but is the second party in procurement



### Why P25 Compliance Assessment?

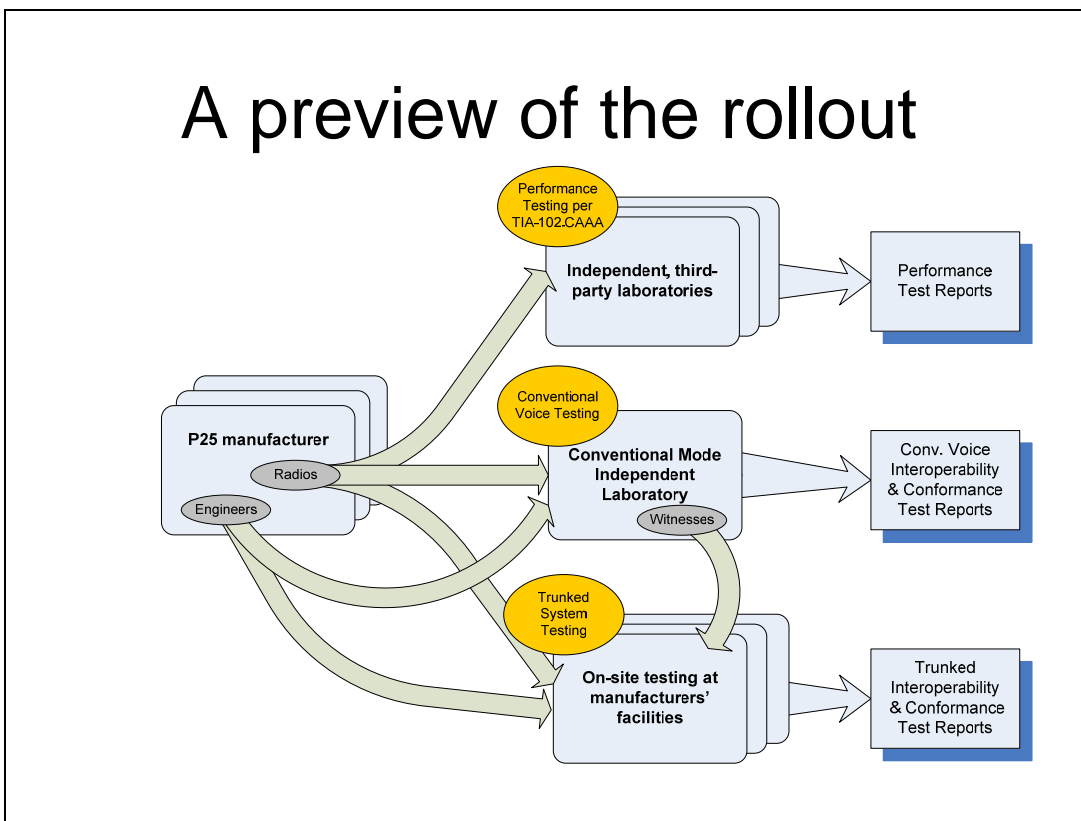
- Interoperability of the equipment isn't meeting user expectations
- Anecdotal evidence of non-conformities
- Congress dictates SAFECOM and NIST/OLES (Office of Law Enforcement Standards) develop a compliance program
- P25 Steering Committee formally requests assistance of SAFECOM and NIST/OLES

### Progress to Date

- Teleconferences between users and manufacturers conducted to explore the requirements of compliance assessment
- Elements of the program defined
- A task group within P25 re-scoped to address compliance assessment standard requirements
- Within TIA, P25 Compliance Assessment Working Group considering business and logistical issues

### Key Elements of P25 Compliance

- Performance
  - Do radios A and B meet specifications?
- Interoperability
  - Does radio A work with radio B?
- Conformance
  - Radio A and B work together, but do they both comply with the standard?



## **Q & A**

**Q** How will the working group address deployed systems? (Public safety is not going to wait on P25 certified systems).

**A** Andy Davis: The compliance assessment tests are being created and will be published. With these, the customer can take the role of the compliance assessment tester on the equipment that is deployed before the assessments are done. Equipment that is deployed will have to be tested for interoperability in the field.

**Q** Could you talk about the process to deal with existing systems regarding standards and resolutions?

**A** Andy Davis: The reference is to what's called a hosted interoperability panel, which consists of manufacturers, standards development organizations, and customers that have deployed equipment or solutions that are experiencing interoperability problems. The hosted interoperability panels focus on resolving problems that have slipped through to customers. Problems aren't limited to those manufacturers or customers. They talk, issue by issue, with manufacturers' technical experts. We discuss:

- What is the problem?
- How did the problem occur?
- How do we fix the problem?
- How can we update the standard so the problem does not occur again?

**Q** Will this performance testing include independent drive testing?

**A** Eric Nelson: Our group (ITS) has conducted research in this area and produced reports on audio quality and best practices for drive testing. However, this work will not be a part of the conformance/compliance testing program presented here today. Independent drive testing is being investigated, but not in the context of this particular program.

**A** Andy Davis: Some of the tests will just have to be on live, deployed systems, such as roam testing.

## **Appendices**

- A. Presenter Bios
- B. Industry Summit Participant List
- C. Industry Summit Media List
- D. SAFECOM Executive Committee (EC)
- E. SAFECOM Advisory Group (AdG)

## Appendix A: Presenter Bios

- **Dr. David Boyd** (SAFECOM, Policy and Funding Panel)

*Director*

*Office for Interoperability and Compatibility*

Dr. Boyd serves as the Department of Homeland Security's (DHS) director of the Office for Interoperability and Compatibility and the Director of SAFECOM. Before joining DHS, Dr. Boyd served as the director of Science and Technology for the National Institute of Justice. He has also served on the White House National Science and Technology Council, the National Security Council Committee on Safety and Security of Public Facilities, and as the Executive Chair of the Justice Department's Technology Policy Council.

- **Andy Davis** (Compliance Assessment Panel)

*Motorola Representative to Project 25 (P25)*

*P25/Telecommunications Industry Association (TIA)*

Andy Davis is a senior resource manager and has 23 years experience with Motorola focusing on development and deployment of Motorola proprietary, Project 16 and P25-based public safety communication technology. Current responsibilities are representing Motorola in Project 25/TIA which includes coordinating the work within Motorola to support P25 standards creation.

- **Chris Essid** (Policy and Funding Panel)

*Commonwealth Interoperability Coordinator*

*Commonwealth of Virginia*

Chris Essid is the commonwealth interoperability coordinator for Virginia. Chris also serves on the National SAFECOM Advisory Committee, Commonwealth Preparedness Working Group, State Interoperability Executive and Advisory Committees, and the State Agencies Radio System (STARS) User Advisory Committee.

- **Gordon Gillerman** (Compliance Assessment Panel)

*Conformity Assessment Advisor*

*NIST*

Gordon Gillerman is the conformity assessment advisor - Homeland Security at NIST. Previously, he was Manager of Governmental Services for Underwriters Laboratories (UL), and staff engineer in the medical device and information technology sectors at UL's Northbrook, IL headquarters.

- **Eldon Haakinson** (Standards Development Panel)

*Electronics Engineer*

*Formerly with National Institute of Standards and Technology (NIST)*

*Institute for Telecommunication Standards (ITS)*



Eldon Haakinson is an electronics engineer with 30 years experience in telecommunications research and engineering. He provided technical support to SAFECOM since its inception, worked with practitioners to develop the Public Safety SoR and with industry to develop the P25 standards.

- **Craig Jorgensen** (Statement of Requirements Panel)  
*Project Director*  
*Project 25 (P25)*

Craig Jorgensen is the project director of Project 25 (P25). He served as the national president for the Association of Public-Safety Communications Officials (APCO) and as president of the National Association of State Telecommunications Directors (NASTD). He is a nationally recognized expert in public safety telecommunications and has held numerous committee assignments for all facets of public safety radio.

- **Scott Kelberg** (Policy and Funding Panel)  
*Division Director*  
*Technical Assistance Division*  
*Office of Grants and Training*

Scott Kelberg is the division director at the DHS Office of Grants and Training for the Technical Assistance Division. This division manages the Interoperable Communications Technical Assistance Program that works in collaboration with the SAFECOM office in working with state and local emergency response agencies to assist in identifying gaps and presenting solutions to interoperable communications needs.

- **Harlin McEwen** (Statement of Requirements Panel)  
*Chairman, Communications and Technology Committee*  
*International Association of Chiefs of Police (IACP)*

For the past 22 years, Harlin McEwen has served as chairman of the International Association of Chiefs of Police (IACP) Communications & Technology Committee. He is also vice chair of the National Public Safety Telecommunications Council (NPSTC) and serves as communications advisor to the Major Cities Police Chiefs Association, the National Sheriffs' Association, the Major County Sheriffs' Association, and as an advisor to the FBI, the NIJ, DHS, and various other local, state, and Federal agencies.

- **Eric Nelson** (Compliance Assessment Panel)  
*Electronics Engineer*  
*Institute for Telecommunication Standard*

Eric Nelson is an electronics engineer with 12 years of telecommunications engineering experience. Presently he serves as an electronics engineer and team leader of the Interoperability Research Laboratory at the Institute for Telecommunication Sciences (ITS) in Boulder, CO. He holds an MSEE degree from the University of Washington in Seattle, where he specialized in applied electromagnetics.

- **John Oblak** (Standards Development Panel)  
*Chairman*  
*TR-8 Standards Committee*  
*Telecommunications Industry Association (TIA)*

John Oblak is vice president for standards and regulatory affairs with EF Johnson Company. In addition, John has been involved with the standards process in the Telecommunications Industry Association (TIA) for nearly 30 years, and currently chairs the TR-8 Committee for Private Land Mobile Radio and TR-8.1 Subcommittee on Transceiver Measurement Methods.

- **Dereck Orr** (Statement of Requirements, Standards Development, and Compliance Assessment Panel)  
*Program Manager*  
*Office of Law Enforcement Standards (OLEs)*  
*National Institute of Standards and Technology (NIST)*

Dereck Orr is the program manager for public safety communications standards at the National Institute of Standards and Technology NIST OLES. He formally served as the SAFECOM program Chief of Staff while working at NIST OLES.

- **Marilyn Praisner** (Public Safety Panel)  
*Vice President*  
*Montgomery County Council*  
*Montgomery County, Maryland*

Marilyn Praisner has represented local government on public safety communications committees including the National Task Force on Interoperability (NTFI) and the Department of Homeland Security's (DHS) Executive Committee for the SAFECOM program.

She currently serves on the National Association of Counties' (NACo) Homeland Security Task Force, where she is in her second term as chair of the Telecommunications and Technology Steering Committee. She also is Maryland's vice chair for Capital Wireless Integrated Network (CapWIN) and is a member and chair of the Executive Committee for SAFECOM.

- **Mark Reis** (Public Safety Panel)  
*Deputy Director*  
*Emergency Medical Services (EMS)*  
*City of New Orleans*

Mark Reis is the deputy director of Emergency Medical Services (EMS) for the City of New Orleans. He has more than 20 years of EMS experience as a paramedic. In 2005, Mark successfully reorganized, deployed, and directed the City of New Orleans EMS division before, during, and after the largest and most catastrophic natural disaster in U.S. history, Hurricane Katrina.

- **Eddie Reyes** (Public Safety Panel)  
*Captain*  
*Alexandria Police Department*  
*Alexandria, VA*

Eddie Reyes is a police captain with the Alexandria Police Department (APD). He has served with the APD for 15 years, with the last 5 years focusing on communication and interoperability issues in the National Capital Region. He also worked on the CommTech Program of the National Institute of Justice (NIJ) from 2002--2005 and is a member of the SAFECOM Advisory Group.

- **Andy Thiessen** (Statement of Requirements Panel)  
*Electronics Engineer*  
*Institute for Telecommunication Standards (ITS)*

Andrew Thiessen is an electronics engineer from the Institute for Telecommunication Sciences (ITS) supporting the SAFECOM program. Andy is the project leader for the Public Safety Statement of Requirements (SoR) on behalf of the SAFECOM program.

- **Alecia Webb-Edgington** (Policy and Funding Panel)  
*Director*  
*Kentucky Office of Homeland Security*

Alecia Webb-Edgington is Kentucky's director of Homeland Security. She formally served for the Kentucky State Police in the Technical Services Division as chief information officer. Currently, she is the president of Kentucky Women's Law Enforcement Network and serves on the board of directors of the National Consortium for Justice Information and Statistics.

- **Charles Werner** (Public Safety Panel)  
*Fire Chief*  
*Charlottesville, Virginia Fire Department*  
*Charlottesville, VA*

Charles Werner is the fire chief for the Charlottesville Virginia Fire Department. In addition, he is the Technology Interoperability chair for the Virginia Fire Chiefs Association, serves on the International Association of Fire Chief's (IAFC) Communications Committee and the SAFECOM Executive Committee, and is the Virginia Statewide Interoperability Executive Committee chair.

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## **Appendix C: Industry Summit Media List**

### Media Represented at Industry Summit

- *Government Executive*
- *Congressional Quarterly*
- *Federal Computer Week*

## **Appendix D: SAFECOM Executive Committee (EC)**

The SAFECOM Executive Committee serves as the leadership group of the Advisory Group (AdG) and the SAFECOM program's primary resource for providing and gathering insights to and from public safety practitioners and policy makers.

### *Responsibilities:*

- Provide strategic leadership and guidance to the SAFECOM program from the perspective of practitioners and policy makers at all levels of government.
- Identify and inform issues requiring policy, procedural, or other business as needed.
- Communicate decisions, plans, and results to relevant constituencies, practitioners, and subsets that are not directly engaged.
- Define and articulate the needs of the public safety community in order to inform the development of materials targeted at that community.
- Build relationships with the AdG in order to leverage its subject matter expertise and make use of a broader pool of resources.

### *Membership:*

The SAFECOM EC includes representation from the Nation's leading public safety and local and state government associations, representatives from interested, contributing Federal agencies, and two seats for public safety at-large members. Current EC members assist in identifying additional organizations for inclusion as appropriate. The SAFECOM program Director ensures that the group is constituted in accordance with governmental regulations and practices.

## Appendix E: SAFECOM Advisory Group (AdG)

The SAFECOM AdG was developed to serve as a vehicle to provide a broad base of public safety community input to the SAFECOM program. This group also provides a mechanism for individuals with specialized skills and common interests to share best practices and lessons learned so that interested parties at all levels of government can gain from one another's experience.

### *Responsibilities:*

- Provide general guidance and recommendations to the SAFECOM EC.
- Provide advice, feedback, and support to the SAFECOM Project Management Office (PMO) and the EC regarding the strategic direction of the program.
- Participate in project action teams to develop work products and recommendations as requested by the SAFECOM EC.
- Communicate decisions, plans, and results to relevant constituencies, practitioners, and subsets that are not directly engaged.
- Participate in periodic, pre-scheduled meetings.

### *Membership:*

SAFECOM AdG membership is comprised of representatives from the local, tribal, state, and Federal public safety practitioner and policy-maker communities and up to 25 public safety at-large members. Members of the SAFECOM EC and their alternates are also members of the AdG.