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**Before the  
Federal Communications Commission  
Washington, DC 20554**

In the Matter of: )  
)  
Increasing Public Safety Interoperability By ) PS Docket No. 10-168  
Promoting Competition For Public Safety )  
Communications )

To: The Commission

**COMMENTS OF THE  
TELECOMMUNICATIONS INDUSTRY ASSOCIATION**

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The Telecommunications Industry Association (TIA) hereby submits comments to the Federal Communications Commission (Commission) in the above-captioned proceeding.<sup>1</sup>

TIA appreciates the opportunity to discuss the current competitive nature of the narrowband public safety market and future competition in the broadband public safety market.

TIA represents the global information and communications technology (ICT) industry through standards development, advocacy, tradeshow, business opportunities, market

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<sup>1</sup> *In the Matter of Increasing Public Safety Interoperability By Promoting Competition For Public Safety Communications*, PS Docket No. 10-168 (rel. Aug. 19, 2010) (Interoperability Competition PN).

intelligence and world-wide environmental regulatory analysis. For over 80 years, TIA has enhanced the business environment for broadband, mobile wireless, information technology, networks, cable, satellite, and unified communications. Some TIA members produce public safety narrowband devices and are involved in Project 25, the initiative that continues to develop standards for narrowband interoperability.<sup>2</sup> TIA is accredited by the American National Standards Institute (ANSI).

## **SUMMARY**

Interoperability of Land Mobile Radio Systems (LMRS) depends on standard setting through Project 25, network management that selects common Project 25 functionalities among public safety users, and effective regulation. In considering how the thirty vendors listed by Project 25 affect pricing of LMRS devices, TIA emphasizes that the special technical and form factor needs of public safety are the principle drivers of narrowband device cost. Finally, while the current state of narrowband interoperability is not related to how broadband interoperability is achieved, it is possible from a technical perspective for narrowband and broadband public safety devices to interoperate.

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<sup>2</sup> TIA has created a series of technical documents known as the TIA-102 suite of standard. This consensus-based standard describes and/or defines a number of the interfaces associated with The Project 25 Standard digital land mobile radio system. Law enforcement and other public safety entities may or may not utilize wireless communications systems and equipment which include the TIA-102 standard, in whole or in part. Additionally, in cases where public safety utilizes TIA-102-based equipment, such equipment may also include features and functions that are not defined by the standard, but which features and functions a public safety agency requires for addressing that agency's operational needs.

## DISCUSSION

### **I. IT IS KEY TO CLARIFY THE DISTINCTIONS AMONG THE TERMS THE PROJECT 25 STANDARD, THE PROJECT 25 PROCESS, AND THE ROLE OF TIA STANDARDS RELATED TO PROJECT 25**

In considering the issues addressed in the Interoperability Competition PN, it is important to understand the issues involved in Project 25 and the Project 25 Standard.

The Association of Public Safety Officials – International (APCO), National Association of State Telecommunications Directors (NASTD), and agencies of the US Federal Government (FED) established Project 25 for the purpose of selecting voluntary common system standards for digital public safety radio communications. The collection of common system standards is known as the Project 25 Standard. The Project 25 Standard also includes the Statement of User Requirements (the SoR), and the system architecture selected by APCO/NASTD/FED to meet those requirements. APCO/NASTD/FED is the sole developer and formulator of the Project 25 Standard. All decisions with respect to the adoption, content, and text of the Project 25 Standard are made solely by the APCO/NASTD/FED.

Project 25 is the term given to the collaborative process between APCO/NASTD/FED and TIA in the development of TIA standards that may be considered by APCO/NASTD/FED for inclusion in the Project 25 Standard. APCO/NASTD/FED has requested TIA's support in the formulation and preparation of candidate TIA standard documents for consideration by APCO/NASTD/FED for inclusion in The Project 25

Standard. The process is defined and documented in a formal Memorandum of Understanding (MoU) between APCO/NASTD/FED and TIA. TIA's Engineering Committee TR-8 promulgates the TIA-102 standard documents at the request of the Project 25. Further, TIA-102 standard documents, which describe and/or define many of the interfaces for digital LMRS, may or may not be included in the Project 25 standard. In effect, TIA-102 standard documents are included in the Project 25 standard to the extent Project 25 so chooses.

## **II. ACHIEVING PUBLIC SAFETY NARROWBAND INTEROPERABILITY DEPENDS ON STANDARDS DEVELOPMENT, EFFECTIVE NETWORK MANAGEMENT, AND SOUND REGULATION**

Ensuring narrowband interoperability requires advancement in three equally-vital areas that all must be present: technical, managerial, and regulatory. With regard to the lack of product and system interoperability in the narrowband space, this has been caused largely by factors other than the number of narrowband public safety device manufacturers.

In evaluating the effectiveness of the three areas noted above, it must be made clear that although Project 25 technology is designed to support interoperability, the Project 25 process was neither envisioned nor intended to establish or manage a public safety interoperable voice network. Such responsibility for procurement, implementation, and effective system management rests with public safety entities, at the local, county, regional, tribal, or state levels. Only effective technical and management approaches at

the public safety level, in combination with effective regulation, can build upon the current state of narrowband interoperability.

TIA, in collaboration with representatives of public safety and the U S Government, provides technical leadership by developing standards for system interfaces and operational functionalities that are vital to enable interoperable public safety narrowband wireless two-way communications. For example, Project 25 has developed three Common Air Interfaces. The first is the Project 25 Phase 1 FDMA, which gives one talk path in 12.5 kHz of spectrum. The second is the Project 25 IP-based data mode air interface. These first two air interfaces enable the Commission's 12.5 kHz bandwidth equivalency mandated by the Commission for the public safety VHF, UHF, and 700 MHz frequency bands. Both of these air interfaces are similarly applicable to the public safety 800 MHz frequency band.

The third air interface, nearing completion, is the Project 25 Phase 2 TDMA air interface, which provides two talk paths in 12.5 kHz of spectrum. This interface in particular enables the 6.25 kHz bandwidth equivalency mandated by the Commission for the public safety VHF, UHF, and 700 MHz frequency bands. This air interface is similarly applicable to the public safety 800 MHz frequency band.

To complement the data air interface, TIA has published the Subscriber Data Interface, which enables data to be transferred between a Project 25 radio and an external data

device connected directly to the radio. An IP Data Gateway permits connectivity of a host data network into an RF subsystem.

TIA has also published a set of wireline interface standards. For inter-system connectivity, TIA has published the Inter RF Sub-System Interface (ISSI), which enables subscriber equipment to roam across system boundaries into other systems RF subsystem sourced from numerous equipment vendors. The ISSI enables subscriber equipment from compliant vendors to roam and interoperate among different jurisdictions, agencies, and cities. The TIA-published Fixed Station Interface enables base station transceivers from various manufactures to be incorporated into an RF subsystem. TIA further published a Console Interface, enabling console subsystems to be tied into an RF subsystem. Similarly, the Project 25 Telephone Interface will ensure connectivity between an RF subsystem and the Public Switched Telephone Network (PSTN).

TIA has similarly published a series of standards related to the provision and management of end-to-end encryption systems, leveraging publications of the NIST Federal Information Processing Standards. Additional interfaces for encryption key loading devices and key management systems are either already published or awaiting prioritization.

Further, TIA is producing work products for applications at the request of the Project 25 Process. Examples of such applications include location services and over-the-air programming.

The Project 25 process has developed a number of other interfaces for which varying levels of documentation have been generated. When prioritized, the Project 25 Network Management Interface will allow system administrators to control, monitor, and manage Project 25 functional elements through an RF subsystem.

With these functionalities available to public safety entities through Project 25 standards developed in TIA, the design, configuration, implementation, and management of each public safety network is crucial. Compliance with The Project 25 System is voluntary on the part of both Public Safety and the industry providers. Ideally, public safety officials will select the Project 25-developed functionalities that an individual network will support while considering similar decisions that have been made by other neighboring, regional, or statewide systems with whom they may have to interoperate. By doing so, interoperability may be achieved. However, coordination, training, and inter-governmental agreements among public safety entities – essential to interoperability – are in some cases lacking. As the SAFECOM Interoperability Continuum<sup>3</sup> accurately represents, technology alone cannot solve all interoperability problems. This factor is reinforced by the Director of the U S Department of Homeland Security Office of

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<sup>3</sup> See Interoperability Continuum, A Tool For Improving Emergency Response Communications And Interoperability, at [http://www.safecomprogram.gov/NR/rdonlyres/54F0C2DE-FA70-48DD-A56E-3A72A8F35066/0/Interoperability\\_Continuum\\_Brochure\\_2.pdf](http://www.safecomprogram.gov/NR/rdonlyres/54F0C2DE-FA70-48DD-A56E-3A72A8F35066/0/Interoperability_Continuum_Brochure_2.pdf).

Emergency Communications, Mr. Chris Essid, who has stated on numerous occasions that “...interoperability is only 10% technology and 90% coordination...”<sup>4</sup>

Lastly, the third essential component required for narrowband interoperability is the Commission’s regulatory approach. With the high number of digital technologies available and the corresponding multiple LMR bands currently in use, the goal of achieving interoperability will be furthered by regulators designating a set of channels as interoperability channels and then selecting a technology that must be utilized on those channels. Further, regulators should adopt equipment certification rules requiring all subscriber units operating in a given band to meet all interoperability rules in order to be accepted in that band.

### **III. PUBLIC SAFETY NARROWBAND DEVICE MANUFACTURERS ADOPTED AND UTILIZED PROJECT 25 FOR PROMOTION OF COMPETITION AND THE DEVELOPMENT OF KEY INTEROPERABILITY FUNCTIONALITIES**

In examining the competitive market for narrowband public safety devices, it is vital to understand that the Project 25 standard was established primarily to enable competition, particularly for terminal devices on Project 25 networks. Moreover, the website [www.project25.org](http://www.project25.org) lists nearly 30 suppliers of Project 25 products and services. Any manufacturer desiring to satisfy market demands may develop wireless communications

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<sup>4</sup> See Glenn Bischoff, *Governance Boosts Interoperability Efforts*, Urgent Communications, April 15, 2010, at [http://urgentcomm.com/networks\\_and\\_systems/news/essid-interoperability-governance-20100415/](http://urgentcomm.com/networks_and_systems/news/essid-interoperability-governance-20100415/) (last visited September 16, 2010).

equipment conforming to varying degrees with the requirements of the voluntary, consensus-based, TIA-102 standard.

The public safety market place for decades has been dominated by relatively small agencies with basic communications needs, and few very large organizations with highly complex requirements. Years of Commission patchwork spectrum allocations is a contributing factor to interoperability issues in both the most rural areas of the country and the concrete canyons of major metropolitan areas. The Project 25 Standard attempted to address both ends of this dichotomy with a core set of technologies that could be implemented to fit the needs of the smallest to the largest agencies, and span the most basic to the most complex network architectures. This enlightened vision, coupled with the joint efforts of the Commission, SAFECOM, and the Department of Homeland Security leading towards the development of shared regional and statewide systems, allows for bridging the gaps.

The level of competition in the narrowband public safety device market may not increase or decrease product price. Public safety networks and equipment require unique attributes; stringent requirements both in performance and form factor add to the manufacturing cost of narrowband public safety equipment. An example can be seen in radio terminal handsets for firefighters. Firefighter handsets require a large form factor and hardened devices that can be operated while wearing large gloves in high heat environments. Additionally, public safety narrowband device requirements for durability and longevity of service are for long periods of time with actual service potentially

reaching 10-15 years. These robust features and extreme operational demands impact product pricing.

#### **IV. WHILE NARROWBAND INTEROPERABILITY DOES NOT CORRELATE TO BROADBAND INTEROPERABILITY, IT IS POSSIBLE FOR NARROWBAND AND BROADBAND PUBLIC SAFETY COMMUNICATIONS SERVICES TO INTEROPERATE**

It is critical that key distinctions between voice interoperability made possible by Project 25 standards and broadband interoperability are noted. The current state of voice interoperability has little bearing on the success of public safety broadband interoperability.

However, interoperability requirements applied to the wireless public safety broadband network can be utilized to promote interoperability between the narrowband and broadband networks under certain conditions. With the appropriate framework, there is no technical reason why a network of networks cannot be expanded to include narrowband networks. The technical aspects of connectivity among private LMRS and commercial operator networks pale when contrasted to the administrative, political, and economic environmental constraints that will arise. However, public safety must participate in the broadband standards development process to ensure that critical public safety requirements for features and functionality are included in future standard releases to promote interoperability. Public safety broadband networks will be advantaged by commercial standards that will provide the foundation for the national network. Over time, industry consensus standards will evolve, such as those specified by OMB Circular

