Before the

FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of:	)	
	)	
Public Safety and Homeland Security	)	PS Docket No. 10-168
Bureau Seeks Comment on Increasing	)	
Public Safety Interoperability by	)	
Promoting Competition for Public Safety	)	
Communications Technologies	)	

COMMENTS OF THE PROJECT 25 STEERING COMMITTEE

Project 25 (P25) is a collaborative partnership between industry (through the Telecommunications Industry Association [TIA]) and the public safety user community to develop common interoperability standards for public safety users at all levels of government. Originally organized under a cooperative agreement between TIA, the Association of Public Safety Communications Officials International, Inc. (APCO), the National Association of State Technology Directors (NASTD) and certain federal agencies including the Department of Defense, The National Communications System, and the National Telecommunications and Information Administration, P25 strove to develop standards that improved spectrum efficiency through the use of narrowband channel resources, promoted marketplace competition, enabled interoperable communications, provided backward compatibility between the new digital narrowband technology and the old analog frequency modulation technology, and established a standardized and graceful migration path for technology advancement which provided the end user nearly equivalent radio coverage and performance. Today, the P25 process

includes participants from over 25 manufacturers and over 70 user agencies and organizations.

The Project 25 Steering Committee was formed to direct the activities of the APCO Project 25 Interface Committee (APIC),[1] and the Project 25 standards development activity as necessary. Additionally, the P25 Steering Committee is charged with resolving all technology, standards and process policy issues which may not be completed through the consensus driven P25 process. The P25 Steering Committee oversees the creation of the Project 25 standards from the development of the user requirements through leadership and direction, and ensures the standards developed are consistent with user requirements. The Steering Committee relies on recommendations from the User Needs Subcommittee[2] that provides direct input through a consensus based process from a wide variety of users. The P25 Steering Committee is currently made up of representatives from APCO, NASTD, and the Federal Government and is co-chaired by APCO and NASTD. Recently, representatives from the Forestry Conservation Communications Association (FCCA), American Association of State Highway and Transportation Officials (AASHTO) and the National Association of State Emergency Medical Services Officials (NASEMSO) have joined the P25 Steering Committee as ex officio members.

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[1] APIC was created as an ad hoc Subcommittee of the TIA Private Radio Section. APIC is voluntary and open to any industry member organization, user or interested party willing to participate. Membership is composed of one voting representative from every organization participating in the process.

[2] The User Needs Subcommittee is a subcommittee of the P25 Steering Committee comprised of user agencies representing local, county, regional, tribal, state, provincial, national entities or user associations with a vested interest in P25, land mobile radio (LMR), and/or mission critical communications. Membership is not limited to domestic public-safety users only.

SUMMARY

The Project 25 Steering Committee respectfully submits the following comments in response to this inquiry regarding the state of competition in the public safety radio industry. The Steering Committee believes the subject of competition in the industry and how standards improve competition is a key point of the inquiry but urges the Commission to further explore the other, perhaps more important, aspects of standardization.

DISCUSSION

I. What are the factors that affect the current state of competition in the provision of public safety communications equipment?

There are several factors that determine the ability of a manufacturer to provide public safety communications equipment. Recent developments in technology, changing user requirements, changing spectrum regulations, and modifications to the standards suites all factor into the ability of a manufacturer to provide solutions to public safety users. It is also important to recognize that while standards provide a base-line technology platform, individual public safety agencies often contract their respective vendors to modify those platforms through the use of standardized and value-added non-standard features or functions, in order to meet a specific agency requirement that may not be met through a standardized technology and still provide maximum interoperability. The Project 25 Steering Committee, working with the numerous APIC and TIA elements, regularly focuses the standards development efforts on improving the existing standards as well as

adopting new technologies as they become available, and are in demand in the public safety community.

II. Are there any additional barriers to additional manufacturers supplying network equipment to the public safety community for narrowband communications?

In the case of providing equipment to the public safety community, manufacturers are required to expend significant resources in developing public safety grade equipment. Technologies available to the general public may or may not be sufficiently designed or hardened to work in the hostile environments in which public safety is required to operate. Developing a public safety version of those technologies is almost always more expensive than similar "commercial" or non-public safety offerings. Unlike commercial service offerings, public-safety grade equipment requires significant product development efforts to meet the requirements and demands such as exceptional performance, durability, high levels of security, greater duty cycles, and extended coverage across large geographical areas. Coupled with stringent interoperability, performance, and conformance standards, the product development cycle inherently limits the number of providers available in the highly-specialized marketplace.

III. Are there any additional barriers to additional manufacturers supplying network equipment to the public safety community for broadband communications?

Broadband communications is on the "bleeding edge" of technology. While there is extensive experience in commercial carriers and technology suppliers in providing broadband services to the general public and some public safety agencies on a lower priority basis, there is very limited data on the ability of that technology to meet the

stringent demands of the public safety market. The lack of agreed upon requirements between public safety and industry and finalized published standards impacts a manufacturer's ability to provide network equipment and solutions for public safety communications. It is critical that public safety and industry find a higher level of cooperation and greater understanding of both public safety's needs and industry's ability to meet some of those needs today and the ability to meet others at some point in the future. As the Commission is aware, there remain numerous unresolved user requirements that are not embodied in the proposed standards, and those additions will likely impact operability and interoperability among public safety users. The most notable requirement missing from currently proposed (and/or under consideration) broadband standard, in the international broadband standards community, is the ability to communicate peer-to-peer without the use of infrastructure.

Additionally, if a manufacturer desires to participate directly in broadband standards development, at least for the leading Long Term Evolution (LTE) standards, the manufacturer must make a considerable investment in membership fees and associated costs to attend standards meetings that are held often and around the world, notwithstanding the actual commitment of personnel and research & development costs.

IV. How would additional competition in the provision of public safety communications equipment improve narrowband or broadband interoperability?

According to the SAFECOM Interoperability Continuum, there are several means to achieve interoperability. Technology is only one of those tenants. From a technology

perspective, the most robust means of providing interoperability is through the use of standards such as Project 25. Project 25 has been designed specifically to improve competition in the public safety communications marketplace. As of August 2010,3 there are -

- Eleven manufacturers providing base station and repeater equipment,
- Fourteen manufactures providing mobile radio equipment,
- Thirteen manufacturers providing portable radio equipment,
- Seven manufacturers providing console equipment, and
- Eight manufacturers providing network solutions.

As was the case leading to, and driving, the formation of Project 25 in 1989 where each of the major manufacturers was fielding its own proprietary trunking network solutions,4 failure to adopt and implement a common protocol creates interoperability problems. We all agree, additional manufacturers in the Project 25 environment creates a better marketplace for public safety communicators equipment suppliers and consumers through innovation and competitive offerings. However, it is extremely important that the Commission never lose sight of the reality that public safety's requirements are normally met by specialized products, which by their very nature can be self limiting.

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[3] *Project 25—A User's Perspective*, presented by Jim Downes, Project 25 Technology Interest Group chair, at the APCO Conference and Exhibition, Houston, Texas, August 3, 2010.

[4] Legacy networks developed in the early-to-mid 1980s by at least three major manufacturers based upon an earlier suite of trunking standards known as Project 16 that only defined features and performance led to completely incompatible over-the-air protocols and no possibility of network-based interoperability. Unfortunately, many of these legacy systems remain in use today and, even as P25 equipment is being fielded, maintain a requirement for backward compatibility that can generally only be met by the manufacturer of that particular proprietary network platform.

V. Conversely, what impact does the current state of competition in the provision of public safety communications equipment and devices have on interoperability?

Currently there are a number of manufacturers as noted in our response which provide public safety communications equipment. In some cases, the solutions are proprietary in nature, and by definition create roadblocks for interoperability in a mixed technology environment. There are, however, a number of manufactures (see Section IV for the breakdown) that offer Project 25 equipment that was/is designed to enhance interoperability for public safety communications. Currently, several of the vendors are providing equipment that has gone through the Project 25 Compliance Assessment Program5 to ensure radios are compatible with each other and the infrastructures that have been implemented. These tests have been focused on the common air interface (CAI) to this point, but will include the other interfaces, features and functions within the P25 suite once those tests are approved and published. Each of these companies may design and build their products differently, but they all interoperate transparently on the CAI and many have done so since the late 1990s.

There are a number of instances throughout the country where wide-area P25 systems are being planned or implemented. These P25 systems and infrastructure support subscriber units and other equipment from multiple vendors and manufacturers.

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[5] The P25 Compliance Assessment Program (CAP) is a partnership of the Department of Homeland Security's Command, Control and Interoperability Division, the National Institute of Standards and Technology, industry, and the emergency response community. The CAP establishes a process for ensuring that equipment complies with P25 standards and is capable of interoperating across manufacturers. P25 CAP is helping emergency response officials make informed purchasing decisions by providing manufacturers with a method for testing their equipment for compliance with P25 standards. http://www.safecomprogram.gov/SAFECOM/currentprojects/project25cap/

With the promise of Federal grant funding, many users are beginning to adopt and implement Project 25 solutions. This grant funding has been a significant contributor to the increase in the number of manufacturers that are providing P25 equipment. But, as noted previously, there is much more to interoperability than just hardware, and problems like the absence of preplanning, inter-local agreements and even multiple-agency systems can have an even greater impact on interoperability.

VI. Assuming additional competition would benefit public safety interoperability, what actions could the Commission take to improve competition in the provision of public safety communications equipment?

One major role of the Commission in codifying the standard for interoperability is to mandate Project 25 for interoperable narrowband public safety communications, similar to its mandate for the 700 MHz narrowband interoperability channels. This action would ensure interoperability across all bands and at all levels of government and improve competition by focusing industry on one goal. Although P25 has been adopted by most Federal agencies, a similar action by the National Telecommunications and Information Administration would ensure federal partners are on a similar track. The Department of Homeland Security has already set the course for standards by mandating P25 as a condition for obtaining Federal public safety communications grant funding. In its 2010 Grant Guidance,6 to address interoperability and the alignment of State, local, and tribal investment with National goals, DHS has mandated that "All new digital voice systems must be compliant with Project 25 (P25) suite of standards."

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[6] Office of Emergency Communications: Fiscal Year 2010 SAFECOM Guidance for Federal Grant Programs.

VII. What are the limitations of Project 25 in promoting narrowband public safety communications interoperability?

Until recently, there have been a number of limitations that Project 25 has been trying to overcome. First and foremost is the misconception that Project 25 is an obsolete standard. Project 25 is continuously being updated to incorporate new user requirements, technologies, and spectrum regulations. The Project 25 Steering Committee, working with the Telecommunications Industry Association (TIA), and the Project 25 Technology Interest Group (PTIG) is endeavoring to better educate the public safety community on the benefits of Project 25.

Secondly, there is a belief that Project 25 is controlled by a single manufacturer. Project 25 was established as a cooperative effort between the Project 25 Steering Committee and TIA. Originally in the process, the technologies that were chosen were provided by one of a few manufacturers. This was simply a reflection on the number of manufacturers that were participating in the process at the time. Within the last decade, the number of manufacturers that have participated in the process, and brought P25 product to the market, has significantly increased. This includes providers of "end-to-end" systems, infrastructure and subscriber equipment, as well as control and console equipment.

It is also important to understand that Project 25 is scalable from the smallest of users to the largest of users, but it cannot, within the scope of the suite of standards, fit all the agencies' needs as they see them. However, P25 standards do not preclude individual agencies from making buying decisions based on non-standard needs or their own

economic analysis. Project 25 was never intended to supplant the knowledge of the local public safety authority with the knowledge of a standards body or those that serve on it.

Finally, the slow progression of a national technology convergence strategy and the continued onslaught of mixed messages, make it extremely difficult for the local planner to know what regulatory, congressional or financial obligations they face next.

VIII. Could open standards for public safety equipment increase competition?

If the goal is to increase public safety communications interoperability through increased competition, the only way to achieve that goal is through standards such as Project 25. As previously mentioned, the publication of the Project 25 Standards and the implementation of products supporting these standards have significantly enhanced the competitive market environment. As older systems are replaced with new P25 Systems, the requirement for legacy proprietary capabilities will decrease and minimize the need for "limited source acquisitions." Furthermore, federal grant guidance and FCC directives could further enhance the effort while allowing the local, state and tribal jurisdictional control of radio systems while providing inherent interoperability at a standards-based level.

There is, however, a misconception (particularly in the user community) that "open standards" should mean standards that are free of Intellectual Property Rights (IPR), meaning no licensing or royalty fees are required for equipment production. Over the recent decades of rapidly developing technologies on a plethora of communications

fronts, the vast majority or research and development has been done by private industry. Those efforts have resulted in the identification and further development by those private industries of the best technologies to support particular applications. As a result of their often considerable investments, those industries have a right to recover their R&D expenses by patenting those technologies and collecting royalties for their use from other manufacturers. P25 has strived to limit its use of standards that include IPR, but some (primarily the P25 vocoder) are such a critical requirement to proper performance in the public safety environment that they can not be avoided. In those situations the P25 Steering Committee has the option of soliciting competitive bids similar for IPR-based technologies as the standards are developed, and also plays a significant role in ensuring that, once IPR has been incorporated into the P25 standards, that IPR owner offers its license at an equitable and reasonable cost to all participating P25 manufacturers.

In any case, finding all the benefits of competition should never obscure our primary mission of protecting the lives and property of those we serve and the lives of those that save us. The Federal Communications Commission would, in our opinion, be remiss in its public responsibility if it forgoes the use of the technology that is required for a mission for technology that they believe, from their perspective, brings competition to the marketplace.

IX. As the Commission considers requirements for the 700 MHz broadband public safety network, are there any requirements on public safety equipment or network operators that would increase competition in the provision of public safety equipment?

To date, the vast majority of the development in broadband has been commercially based, network-centric services with very little regard for public safety requirements. Public safety users require the ability to use broadband technologies, but may be forced do so at the cost of adopting non-standard, non-interoperable solutions to meet the unique environments and requirements found only in the Public Safety community. The development of interoperable standards for infrastructure and subscriber equipment along with the development of public-safety grade user equipment will be necessary for systems and equipment to interoperate through various scenarios and environments.

In the end, the absence of a clear plan and focus for vetting the users requirements with industry and industry's limitations in meeting those requirements, will and should cause competition to fall by the wayside in favor of priority solutions. It is unreasonable to expect public safety agencies with a real need today to wait for Commission or Congressional action tomorrow or next year or even the next decade. Conversely, it is unreasonable for Public Safety to expect the technology of the future today when reality will require a protracted and deliberate planning and standards process.

CONCLUSION

We strongly recommended that the FCC carefully evaluate all policies concerning enhancing public safety communications, both for narrowband and broadband technologies. While broadband technologies will play a large part in public safety's plans and may be the "wave of the future," narrowband technologies are currently the only solution available to meet the complex mission-critical voice requirements of public

safety and will be for the significant future. Project 25 is today the only user-driven interoperability standards suite that meets the needs of the emergency response and Public Safety community and in the foreseeable future.

Respectfully Submitted,

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