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Statement of

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**INTERNATIONAL, INC. (APCO)**

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**

**EN BANC HEARING ON PUBLIC SAFETY INTEROPERABLE COMMUNICATIONS**  
**AND THE 700 MHz D BLOCK PROCEEDING**

Brooklyn, New York  
July 30, 2008

Thank you Chairman Martin and Commissioners Capps, Adelstein, Tate, and McDowell, for the opportunity to appear before you today. My name is Robert Gurss, and I serve as Director of Legal & Government Affairs for the Association of Public-Safety Communications Officials-International (APCO). APCO President Willis Carter and President-Elect Chris Fischer would have liked to have been here in New York to present this testimony. However, they and other members of the Board of Officers are meeting today in Kansas City in preparation for APCO's Annual Conference. I am pleased to present this testimony on their behalf.<sup>1</sup>

APCO is the nation's oldest and largest public safety communications organization. Founded in 1935, APCO has nearly 16,000 members, most of whom are state or local government employees who design, manage, and operate public safety communications systems for police, fire, emergency medical, forestry conservation, highway maintenance, disaster relief, and other public safety agencies.

<sup>1</sup> I am also "of counsel" with the firm of Fletcher, Heald & Hildreth, PLC. My statement today is on behalf of APCO and does not necessarily reflect the views of Fletcher, Heald & Hildreth, PLC, or its clients.

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Benefits of a National Public Safety Broadband Network.

APCO strongly supports the formation of a national, interoperable, broadband public safety communications network.<sup>2</sup> We firmly believe that the most viable means of achieving such a network is through a network-sharing agreement between a national public safety broadband licensee for the 700 MHz public safety broadband spectrum and the winner of the adjacent D Block of commercial spectrum. Absent extraordinary and unprecedented federal grants, no other available approach will provide the funding for a nationwide public safety broadband network.

Wireless broadband communications provide exciting new opportunities for improved public safety operations. Broadband video, high speed images, Internet access, and data of an endless variety would greatly enhance the ability of police, fire, EMS and other personnel to protect the public and respond to emergencies. However, many of those benefits could be lost if public safety broadband systems are deployed in the same manner as most land mobile systems have been deployed over the last 70 years.

Public safety communications are usually provided through land mobile radio systems operated by and serving a single agency or jurisdiction. That allows systems to be designed to meet agencies' specific operational and coverage requirements within their unique geographical constraints, while also providing agencies with unfettered control over their communications systems. However, separate radio systems (which can be in any of four different portions of the radio spectrum) have also led to significant problems over time in many cases, including overly-specialized radio systems and specifications, expensive radio equipment with a limited number of vendors, duplication of infrastructure, inadequate interoperability, and inefficient use of scarce

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<sup>2</sup> Further details on the issues presented herein can be found in APCO's Comments (filed June 20, 2008) and Reply Comments (filed July 7, 2008) submitted in response to the *Second Further Notice of Proposed Rulemaking* in WT Docket No. 06-150 and PS Docket No. 06-229, and in APCO's prior submissions in those proceedings.

radio spectrum. Fortunately, there has been a trend in recent years towards consolidation of public safety radio systems to serve larger areas, such as a county, region, or state.<sup>3</sup> However, there continues to be substantial variations in land mobile radio systems across the nation, with critical gaps in interoperability.

A national broadband network would ensure that all public safety agencies, regardless of their size, location, expertise, or financial resources, would have the same opportunities to take advantage of the new world of broadband communications. Absent a national network, only those few agencies with substantial resources and expertise will be able to provide their first responders with state-of-the-art broadband communications. The result would be islands of robust, and probably incompatible, public safety broadband networks, surrounded by vast unserved areas.<sup>4</sup>

A national network would provide users with a single technology standard, giving them the ability to acquire off-the-shelf technologies at substantially less cost than today's land mobile radios. They would also be freed of the obligation to construct costly and duplicative broadband infrastructure. A national broadband network might also provide a common link to improve interoperability among all types of public safety communications systems.

A national network also creates the opportunity to form a public/private partnership with the D Block licensee. It is difficult to imagine such an arrangement with a patchwork of local, state, or regional licensees across the nation. As APCO has described at length in the record of this proceeding, a national public/private partnership provides the most viable means for funding

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<sup>3</sup> Steve Proctor, who is testifying here today, is the director of one of the more successful consolidation efforts.

<sup>4</sup> APCO supports provisions to allow local/regional deployments ahead of the national network deployment, especially in those areas where the national network may be slow to deploy. Such localized efforts need to be coordinated with and approved by the national public safety broadband licensee, and will need to merge into the national network at some point in the future. APCO also supports provisions to accommodate existing 700 MHz data networks, such as that in the District of Columbia.

a nationwide broadband capability. Finally, the public/private partnership made possible by a national broadband license would also create opportunities for highly efficient spectrum sharing.

#### Required Capabilities for the National Public Safety Broadband Network

Public Safety has specific requirements that cannot be met by a purely commercial service provider. In general, public safety agencies need priority access, comprehensive coverage, high capacity and throughput levels to prevent delays in transmission of critical information, extremely low outage rates, hardened facilities, and redundancy to ensure service during emergencies. The challenge is to develop specifications for those requirements that are sufficient to meet public safety needs but are also economically viable for a shared, public/private network.<sup>5</sup>

APCO believes that it is unrealistic to expect that the national broadband network will be able to provide sufficient coverage or reliability to replace "mission-critical" voice communications now provided over land mobile radio systems. The voice component of the broadband network will probably eliminate the need of some public safety personnel to carry both a cell phone (generally used for routine, non-emergency communications) and a land mobile radio. However, land mobile radio will likely remain the principal means of providing mission-critical communications.

On the other hand, data and video capabilities of the national broadband network must be offered at much higher levels of coverage and reliability than networks designed for commercial use. Intermittent service, reductions in throughput, extended outages, and other deficiencies common to commercial networks are unacceptable for any form of public safety communication.

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<sup>5</sup> In addition to APCO's comments, the initial comments of the National Public Safety Telecommunications Council and the Public Safety Spectrum Trust contain detail technical recommendations for the broadband network.

One of the challenges in designing a broadband network is that we will not know exactly how the network will be used until it is deployed. Just as even the most visionary of technologists could not have predicted ten years ago the extraordinary array of Internet applications available today, we cannot predict with certainty how public safety personnel will use wireless broadband capability in the future. The best guess is that the network will be used to transport video input and output, high-speed data services, complex engineering and building plans, plans for electrical and gas service, complex medical information, engineering drawings, geographical mapping, fire hot spot locations, firefighter monitoring, undercover services, complex medical files and information, chemical analysis information, robotic control, and so many other broadband high-speed data services that the list is inexhaustible.

What is clear is that public safety agencies will use the network only if it provides fast, reliable coverage when and where they need it. In a shared network environment, priority access will be especially important. APCO's comments in response to the *Second Further Notice of Proposed Rulemaking* describes our recommendation that 50% of the capacity of the shared network should be subject to "ruthless preemption" for public safety use, and that 50% of the capacity should be available exclusively for commercial services, absent a catastrophic event requiring additional public safety capacity. This approach should give the D Block licensee and its customers sufficient certainty regarding network availability. With careful capacity management, the network will also be able to satisfy public safety service demands.

The national broadband network will need to be built-out to reach a very high percentage of the nation for it to be effective in addressing emergencies wherever they may occur. We support the recommendations of the PSST in this regard. APCO has also indicated that an

extended term (*e.g.*, 15 years) may be appropriate to allow the D Block licensee time to reach the required areas.

The record before the FCC also provide guidance regarding technical requirements related to coverage, capacity, throughput, and Quality of Service (QoS) for the network.<sup>6</sup> APCO recommends that the specifications will need to reflect the exact mix of deployed terminal and application services in use.<sup>7</sup>

In the areas of robustness, hardening, system reliability, and availability, APCO recommends a transparent, result-oriented process rather than over-reliance on detailed, arbitrary requirements.<sup>8</sup> There are certain components of the network that may need to be specified at high reliability levels; these are the points of significant failure such as high capacity backbone connections, high traffic routers, etc. However from the user perspective, the network must exhibit high availability, and how this is achieved should be transparent. Additionally, over-specifying how the reliability/availability is achieved can make it difficult to apply creative solutions that offer functionally high levels of reliability using a combination of solutions such as hot standby equipment, alternate routing, and overlapping coverage between site and/or site sectors.

These and other important technical matters are addressed in detail in the record before the Commission, though some issues will certainly need to be resolved as part of a network

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<sup>6</sup>*See, e.g.*, APCO Comments at 30-31.

<sup>7</sup>The APCO comments include the following example: "although a public safety PDA-based mobile radio might have low transmitter power and high antenna/body losses, its requirements for application layer data rates for video are generally low due to its limited display resolution. As another example, higher data rates would be required for a vehicle based application with substantially greater transmission and reception power levels."

<sup>8</sup> APCO Comments at 31-34.

sharing agreement and in the ongoing relationship between the D Block licensee and the national public safety broadband licensee.

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In conclusion, APCO congratulates the Commission for its ongoing commitment to address the critical communications requirements of our nation's first responders. Thank you again for the opportunity to appear before you today.