Before the
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

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

Comments of United States Cellular Corporation

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

Comments of United States Cellular Corporation

United States Cellular Corporation ("USCC") hereby files in response to the Public Notice of the Public Safety and Homeland Security Bureau (DA 10-1556) released August 19, 2010 ("PSHSB PN") requesting comments on potential barriers to achieving nationwide interoperability for broadband communications, and what actions the Commission should take in this area.

Introduction

The PSHSB asks what actions the Commission could take to improve competition in the provision of public safety communications equipment, to facilitate open standards for public safety equipment and what requirements on network operators or equipment manufacturers of public safety equipment or network operators should be adopted to increase competition in the provision of public safety equipment. We believe that the single most important thing federal policymakers can do to catalyze the Public Safety Broadband Network ("PSBN") and assure its

long-term viability, is to provide a regulatory framework that, wherever possible, encourages Public Safety to leverage commercial standards, architectures, designs, components, and applications. The goal of establishing a nationwide interoperable broadband network for Public Safety can be reached but the cost of nationwide deployment, upgrades and operations must be affordable, critical technologies and standards must be developed and updated, and requirements must be in place supporting continued uniformity and interoperability of core operations. Effective collaboration between Public Safety and its commercial partners is essential to make sure that the skills and knowledge of carriers are available to assist Public Safety in achieving its goal to develop a leading edge nationwide fully interoperable broadband network.

Discussion

1. Public Safety/Carrier Partnerships Using Band Class 14 Spectrum Should, Wherever Possible, Share Design, Procurement, Construction and Operation of Network Components so That Public Safety Can Tap into the Broader and Richer Base of Suppliers Available to the Commercial Operators.

Public Safety/carrier partnerships using Band Class 14 spectrum should, wherever possible, share design, procurement, construction and operation of network components. The shared networks will leverage the suppliers to commercial carriers, commercial infrastructure and expertise, leading to far lower costs to deploy Public Safety capabilities compared to a stand-alone PSBN. The FCC estimated that a stand-alone PSBN would cost $20 -30 billion more, likely leading to less deployment of Public Safety capabilities and less availability of Public Safety equipment. The Congressional Research Service concluded that accessing the carriers' technical resources will be critical for implementing the capabilities that Public Safety plans for the PSBN: "collaboration with commercial partners is important for mustering all the skills and knowledge resources

needed for developing the leading-edge broadband networks that are the goals of the submitted [Public Safety network] plans."[1] As proposed in the FCC's National Broadband Plan and by major Public Safety organizations, the partnership networks will use LTE, an open, global standards and IP-based technology that could support the features requested by Public Safety.

2. **Availability, Quality and Affordability of Public Safety Equipment Will Greatly Improve by Applying Equipment Specifications to a Large Base of Customers, Public Safety as well as Commercial, in Band Class 14 and Across the Entire 700 MHz Band, to Encourage Vendor Diversity and Economies of Scale.**

The availability, quality and affordability of Public Safety equipment will greatly improve by applying equipment specifications to a large base of customers, Public Safety as well as commercial, in Band Class 14 and across the entire 700 MHz band. Band Class 14 includes 20 MHz of prime spectrum that could support Public Safety requirements as well as substantial commercial use. As the Congressional Research Service found in a report released on July 1, 2010: "The participation of commercial carriers in developing and deploying, for example, a common radio interface, is expected to put the cost of public safety radios in the same price range as commercial high-end mobile devices ($500). By contrast, interoperable radios for the narrowband networks at 700 MHz cost $3,000 and up, each."[2]

Moreover, a federal goal, targeted support, and even an FCC rule requiring equipment to operate across the 700 MHz frequencies (like the rule established when cellular networks were getting started) would greatly expand the customer base for

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[1] L. Moore, "Public Safety Communications and Spectrum Resources: Policy Issues for Congress" at 12 (Sept. 1, 2010).

[2] L. Moore, "Spectrum Policy in the Age of Broadband: Issues for Congress" at 8 (July 1, 2010).

devices available to Public Safety, imparting momentum to multi-band development that the market alone might not. The larger customer base for compatible devices would lead to lower costs and faster access to devices meeting Public Safety requirements and providing other advanced features. It would also expand the spectrum supporting interoperable devices that would be available to Public Safety in emergencies. This ability to roam with priority access across commercial LTE networks will also provide increased reliability and resiliency by leveraging the network diversity provided by having multiple LTE roaming partners.

3. If Carriers Have Partnerships With Public Safety for Shared Networks, These Carriers Will Reflect Public Safety Requirements When They Participate in the Standards-making Process, When They Set Procurement Specifications for Equipment and When They Introduce New and Enhanced User Applications.

If carriers have partnerships with Public Safety for shared networks, these carriers will reflect Public Safety requirements when they participate in the standards-making process and when they set procurement specifications for equipment. So far, Public Safety has had only a limited voice in the 3GPP process to develop LTE standards, and Public Safety faces the challenge of driving ongoing development of LTE standards to support certain Public Safety requirements.[3] Carriers participating in the 3GPP process have established standards for LTE in 3GPP Release 8 and Release 9 addressing numerous (but not all) requirements identified by Public Safety (such as applications like push-to-talk, quality of service specifications and priority access). As network partners with Public Safety, carriers would be natural and effective advocates for Public Safety requirements into the 3GPP standards process.

[3] See L. Moore, "Public Safety Communications and Spectrum Resources: Policy Issues for Congress" at 8.

Additionally, equipment capabilities evolve as carriers specify the features desired for their users and work with their suppliers (manufacturers, applications developers and others) in the context of their entire customer base. In various forums, policy makers and public safety representatives have set the goal of ensuring that capabilities available to commercial customers be provided to public safety without limitations." Public Safety/carrier partnerships would give carriers natural incentives to include requirements for Public Safety equipment and capability in this development process. Without this kind of commercial carrier engagement, Public Safety would lose opportunities to leverage the carriers' design, technical development and procurement activities and, over time, Public Safety's product roadmaps could diverge from the commercial path, making it much harder for the public safety market to keep up with commercial development. The more the PSBN can leverage commercial standards, architectures, designs and components, the more likely it is that Public Safety can tap into the broader and richer base of suppliers available to the commercial operators.

4. **Fostering Strong Commercial Partner Participation in PSBN Deployments Will Also Permit Commercial Partners to Leverage the Investments Required to Support Public Safety Applications and Functionalities to Benefit Other Sectors of the Economy and Unserved Areas.**

Fostering strong commercial partner participation in PSBN deployments will also permit commercial partners to leverage the investments required to support Public Safety applications and functionalities to benefit other sectors of the economy and unserved areas. Public Safety has unique requirements, driven by the critical missions it performs. Nonetheless, other sectors may have similar and in some cases complimentary needs and could contribute needed financial support to the development of equipment and capabilities required by Public Safety.

Public safety requirements related to the survivability, availability and resiliency of the network may have value for certain commercial users. The ability to offer such a superior network capabilities using shared network capabilities would create incentives for commercial partners to work with Public Safety. Similarly, such users might value priority access features, even if their priority was necessarily subordinated to that of public safety users. Other applications identified by Public Safety could likewise have commercial value. These include automated vehicle location, alarm and critical infrastructure monitoring, and many location-based capabilities. Device functionalities such as water-resistance and battery life also have broader application.

Finally, the challenge of cost effectively deploying mobile broadband to consumers in rural areas is complementary with the challenge of providing broadband capabilities to Public Safety in those areas.[4] In its Sixth Broadband Deployment Report, the Commission noted that "... unserved areas are home to 24 million Americans living in 8.9 million households." [5] As the nation supports the expansion of mobile broadband infrastructure through the universal service program, the networks built by rural wireless companies can be leveraged into the Public Safety Broadband Network, making it much easier to achieve the ubiquitous geographic coverage that is part of the vision of a truly nationwide, interoperable public safety broadband network while at the same time helping to meet the critical needs in unserved areas of consumers, businesses, health care, education, energy and other public sector users.

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4 See National Broadband Plan Recommendation 5.8.2 (Excerpt: "...The Commission should also consider the use of incentives to promote additional deployment by the D Block licensee(s) for the benefit of rural citizens and for public safety agencies.")

5 See Sixth Broadband Deployment Report (FCC 10-129) released July 20, 2010 in GN Dkt No. 09-137/GN Dkt No. 09-51 at ¶22.

5. **The Commission Should Facilitate the Timely Development of Technical Specifications for Public Safety Equipment and Capabilities Which Are Coordinated Across Public Safety Agencies.**

The Commission should facilitate the development of technical specifications for Public Safety equipment and capabilities. Carriers and their suppliers will best be able to meet Public Safety requirements if specifications reflecting these requirements are developed in a timely manner and coordinated across Public Safety agencies. This process will benefit from federal funding, the technical expertise of federal agencies, and federal government outreach to Public Safety representatives.

Current Public Safety network plans need further development of technical specifications, and could benefit from federal assistance. The technical specification process must be on-going as Public Safety requirements and technical capabilities evolve. As the Congressional Research Service recently observed:

> "Part of the challenge for [the FCC's Emergency Response Interoperability Center (ERIC)] and network developers participating in the early-build-out program will be to establish a profile for public safety requirements that can be developed in conjunction with the Band 14 profile ... ERIC would work closely with the Public Safety Communications Research program, jointly managed by the National Institute of Standards and Technology (NIST) and the NTIA, to develop and test the technological solutions needed for public safety broadband communications. The Department of Homeland Security will participate in the areas of public safety outreach and technical assistance, as well as best practices development." [6]

Next, as a critical user of equipment based on the LTE standard, Public Safety needs greater voice in the standards process. As noted earlier, one way to provide that voice is by more tightly coupling the interests of carriers and Public Safety through shared networks. That is only part of the solution, however. The Federal government,

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[6] See L. Moore, "Spectrum Policy in the Age of Broadband: Issues for Congress" at 8.

represented by DoC/PSCR, DHS, the FCC and others need to be directly involved in the standards process and that requires a commitment of resources.

Conclusion

The goal of establishing a broadband network in support of Public Safety has been elusive, but is achievable with full commercial engagement, creative leveraging of core Public Safety driven capabilities, and targeted federal leadership. The cost of nationwide deployment, upgrades and operations must be affordable, critical technologies and standards must be developed, provision must be made to deploy advanced technologies as they become available, and requirements must be in place supporting continued uniformity and interoperability of core operations. The more the PSBN can leverage commercial standards, architectures, designs and components, the more likely it is that Public Safety can tap into the broader and richer ecosystem of technologies and suppliers available to the commercial operators.

Respectfully submitted,

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