

*courtesy Howard Buskirk  
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## **700 MHz Waiver Recipients Steaming Forward on Public Safety Networks**

Washington, New York, Boston, San Antonio and other local governments that received FCC waivers to build wireless networks using 700 MHz spectrum provided the commission with updates on their efforts. In May, the agency approved 21 waiver requests on file at the commission. Meanwhile, industry commenters offered advice to the FCC on rules for a 700 MHz network that would ensure nationwide interoperability, addressing critical issues including roaming and priority access.

New York City still is working on a timeline for its network, but has sought \$150 million in federal funds through the Commerce Department's Broadband Technology Opportunities Program. "New York City has been in close contact with New York State officials during June 2010 as both the City and the State were preparing their respective BTOP applications," the city said. "During this time a face to face meeting at One Police Plaza was held and several conference calls were conducted. New York City has met with several radio vendors to gather information regarding what products, skills and technology they offer that may be beneficial to the successful completion of the project."

D.C. officials filed an interoperability plan at the FCC this week, but asked that the details be kept confidential. Washington also has sought BTOP funding. "The District received information from many different vendors and considered many different network models, though it had for some time recognized the substantial benefits provided by a 'leveraged network,'" it said. "As it developed its BTOP application, the District received the most detailed and comprehensive information from AT&T and one of its vendors, Alcatel-Lucent; as a result, the District's BTOP application reflects the kind of leveraged approach that AT&T would likely offer."

Boston filed a detailed plan with the regulator. "The City's goal is to align with FCC's goal on deploying — not only an Interoperable LTE network, but also have Interoperable applications like Computer Aided Dispatch (CAD) and Records Management system for Public Safety by 2012," Boston said. "This citywide 700 MHz public safety LTE network will enhance the utility of the CAD system, provide interoperable communications, and data exchange among the fire, police, EMS, and the Mayor's Office of Emergency Management."

Hawaii intends to issue one or more requests for information and requests for proposals no later than June 30, and is hiring a consultant firm to help it develop its plan, the state said. It asked for a BTOP grant of \$115,061,000 and has identified "over \$19,900,000 in upcoming Capital Improvement Budget expenditures" needed to support the network, the state said. "The State and/or its partner counties have met with Motorola, Alcatel-Lucent and Northrop-Grumman officials to discuss our BTOP grant and system plans. All three expressed a keen interest in bidding on any competitive procurement that the State may offer."

San Antonio is proposing what it calls the Alamo MobileNet, which it hopes will be a "model implementation of the FCC vision for 700 MHz public safety broadband deployment," it said. "The planned service area encompasses 95 percent of the population of Bexar County as well as the major routes of Comal County, and will bring broadband applications with area-wide roaming to 105 Public Safety organizations." San Antonio said it also sought BTOP funding: "If the City is unsuccessful in receiving a BTOP grant, it will implement a pilot project smaller in scale, but meeting all the same LTE ... standards."

Seattle issued a request for information May 27 as part of preparing its application for BTOP funding, the city said. It estimated the cost of the network as \$27.94 million, for which it has already sought a \$19.54 million grant. Local governments in the San Francisco Bay area made a filing, but asked that the information submitted be kept confidential. Chesapeake, Va.; Mesa, Ariz.; Charlotte, N.C.; and Mississippi and Oregon were among local governments that also made interoperability filings at the FCC in recent days.

“We are pleased with the progress the waiver applicants have made, and we look forward to working with them going forward,” an FCC spokesman said Tuesday. “These states and localities are moving forward with initiatives that will create the first regional broadband public safety networks in the country and will be instrumental in our collective efforts to bring nationwide interoperable broadband communications to America's first responders.” Numerous industry players also offered the FCC advice on rules for the network, in response to a May 18 public notice by the Public Safety Bureau.

The National Public Safety Telecommunications Council, representing major public safety organizations, urged the FCC to “focus first on issues specifically required for waiver grantees to move forward and deploy their regional system with the interoperability provisions adopted in the Commission's waiver Order” and then “initiate a comprehensive rulemaking proceeding to determine appropriate regulatory requirements for the long term.” The commission already set forward rules requiring agencies who got waivers to deploy 4G LTE equipment. “Experience gained in actually deploying and beginning to use public safety broadband systems will provide important information to guide the need for any additional regulatory requirements,” NPSTC said.

NPSTC said one key question the FCC raised is whether there should be a nationwide core to which individual networks are connected. “NPSTC would be surprised if the Commission actually intended to infer a single Evolved Packet Core (EPC) nationwide, which would obviously result in a single point of failure,” the group said. “One nationwide EPC used by all regions would not provide the level of redundancy and would entail significant eNodeB backhaul costs and microwave backhaul spectrum requirements. As waiver grantees move forward with RFPs to plan and design systems, we believe they will be in the best position to address these requirements. We do not recommend the Commission take on the role of designing the system and mandating that all systems use one common EPC.” NPSTC said priority access rules will require more work to get the standards right: “In all cases, we believe that some human intervention by public safety personnel (incident commanders, their designees and/or dispatchers) is needed to make the right prioritization calls.”

AT&T repeated arguments that “the most important action the Commission can take to assist in the development of highly advanced and interoperable public safety wireless broadband networks” is supporting public safety's efforts to get direct control of the 700 MHz D-block. “The D-block spectrum will be essential to the future development of public safety broadband networks and will be particularly crucial during times of high traffic, when many public safety users from outside the incident area may be roaming on a single local or regional network,” the telco said.

Touching on the critical issue of roaming, AT&T urged the FCC not to limit the network to 700 MHz spectrum. “If voluntary arrangements and technologically feasible solutions can be developed to allow roaming onto other frequency bands or other air interfaces, these methods should be embraced,” the carrier said. “Public safety agencies should have the benefit of as wide a choice as possible for roaming partners, allowing them to select the most advantageous arrangements for their areas and users.” AT&T also said development of a priority access regime for public safety users “should be done within the public safety community, which will have the best sense of the classes of users that require priority and in what order.”

Motorola urged the FCC to impose only minimal rules. Roaming is key, “but each local and regional public safety broadband network will have different challenges and requirements that will demand at least some level of customization,” the company said. “This flexibility and creativity should not be suppressed with onerous top-down regulations. Thus, Motorola recommends that the Commission set only the minimum requirements necessary to ensure interoperability among the public safety broadband networks and otherwise refrain from prescriptive regulatory mandates.”

Alcatel Lucent said roaming between public safety and commercial LTE networks is covered by existing standards, assuming end-users devices will support the appropriate frequency bands. “This will require roaming agreements to be established for each public safety provider and the selection of a clearinghouse entity for public safety, as well as appropriate security mechanisms among the networks involved,” the company said. It warned that if more than 50-70 public safety networks are created it “would create logistical problems and would be economically burdensome due to the large number of LTE Cores that would be required to support these networks.”

The company recommended the FCC “provide rules or guidelines for the introduction of new public safety networks in order to ensure that the number of networks does not become too large.” On priority access, the company recommended that the agency's new Emergency Response and Interoperability Center “define a global approach to the use of LTE's Allocation and Retention Priority (ARP) and QoS Class Identifier (QCI) to facilitate priority access services for public safety networks.”

LTE is capable of addressing priority access requirements of a public safety network, T-Mobile said. “LTE has been designed to provide a rigorous priority access system that includes a hierarchy of fifteen levels of traffic prioritization,” it said. “The LTE standard also includes a scheduling system that transmits higher priority traffic before lower priority traffic. Thus, LTE can provide the necessary capabilities for granting public safety users priority access when they roam on foreign public safety or commercial networks.” T-Mobile also urged the FCC to consider the National Communications System's Wireless Priority Service as a prototype. “WPS ... supports roaming across networks when the underlying roaming partner network supports WPS,” T-Mobile said. “WPS is a successful first generation priority access approach geared to voice that can serve as a framework for priority access on commercial mobile broadband networks.”