

FCC Provides PLMN ID Guidance to Public-Safety Operators

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By Sandra Wendelken

The FCC provided guidance to 700 MHz public-safety broadband waiver recipients on their implementation of a public land mobile network identifier (PLMN ID) to support the interoperability of the Long Term Evolution (LTE) deployments. The FCC sided with public safety and adopted a single nationwide PLMN ID approach for public safety.

The order comes after a Dec. 7 joint filing from the state of Texas; Charlotte, N.C.; Adams County, Colo.; and the state of Mississippi, which are all early adopters of LTE and broadband waiver recipients. The filing sought additional guidance and action from the FCC on the allocation of an operational PLMN ID, the adoption and allocation of a network identifier numbering scheme in conjunction with the PLMN ID, and a defined plan to achieve network interoperability as defined in the orders.

The PLMN ID is the specific LTE network identifier that works similar to system IDs in digital mobile radio networks. PLMN IDs are a finite resource used in all Third Generation Partnership Project (3GPP) systems. Texas officials with other public-safety input last year [provided recommendations](#) to the FCC for establishing a nationwide coordination framework for network identifiers and a database to administer and maintain the multiple network identifiers.

The four petitioners are among the first public-safety jurisdictions that plan to launch public-safety LTE service. However, public-safety LTE networks can't begin service until a PLMN ID is administered.

"The network identifiers have to be precisely coordinated among all the networks using that particular PLMN ID," said Cynthia Wenzel Cole, a Texas Department of Public Safety (DPS) contractor. "Deployments can't begin until a network identifier coordination plan is completed."

In its order, FCC directed each petitioner to implement, prior to its date of service availability, a common PLMN ID that the Alliance for Telecommunications Industry Solutions' IMSI Oversight Council (ATIS IOC) designates for 700 MHz public-safety broadband networks that are operated pursuant to waiver in the public-safety broadband spectrum (763 – 768/793 – 798 MHz). The commission also said the waiver recipients should collectively implement, with the assistance of a common competent administrator, a scheme for the assignment of international mobile subscriber identities (IMSI) and other identification numbers necessary to support all the petitioners' operations of LTE broadband deployments on an interoperable basis and to arrange for a common competent clearinghouse to support commercial roaming by all of the petitioners.

"We will request that ATIS only authorize the use of this common PLMN ID by the individual petitioners," the FCC said.

Each waiver recipient will be individually responsible for ensuring that it properly implements the designated PLMN ID within its segment of the network. Collectively, the waiver recipients will be responsible for working with ATIS IOC to determine a fee structure for their PLMN ID allocation and for remitting to ATIS IOC any required fees.

To ensure that the numbering scheme developed for the deployments is developed from the Public Safety Communications Research (PSCR) draft guidelines and administered in a manner consistent with standard industry practice, the commission said petitioners should retain the services of a common administrator to oversee the development and implementation of this scheme. The FCC required that the common numbering administrator petitioners retained be selected through either a competitive process or through the assistance of a federal agency.

The administrator must meet each of the following minimum qualifications:

- It cannot be an FCC licensee or any person or entity affiliated with any FCC licensee.
- It cannot be or include any of the petitioners or any person or entity affiliated with any of the petitioners.
- It must demonstrate that it has sufficient security credentials to process, maintain and

secure public-safety network identifiers and numbering blocks.

- It must have at least five years of demonstrated experience in telecommunications process management, tools and development maintenance.
- It must possess at least five years of demonstrated experience in numbering schemes such as telephony, IP addressing, and 3GPP numbering, addressing and identification.

Petitioners must direct the administrator, at a minimum, to develop from the Public Safety Communications Research (PSCR) draft guidelines a network identification numbering scheme for deployments, assign to each petitioner network MSINs and other identification numbers that will allow expansion of the scheme to support the nationwide network; and maintain the scheme over time and institute any changes necessary to ensure the long-term viability of petitioner's deployments. The administrator shall also provide any petitioner with a copy of the scheme upon its request.

Waiver recipients must submit their choice of numbering administrator for the FCC's approval by Feb. 8. Provided that the FCC approves the submission, petitioners should complete the scheme by March 31. Each petitioner shall verify its compliance with this deadline in the "Deployment" section of its April 2012 quarterly report, including verifying the retention of a common numbering administrator that meets the requirements set forth above.

The use of a common PLMN ID among petitioners creates the need for a common clearinghouse available to manage the relationships with commercial roaming partners and to settle the payment issues associated with the public-safety waiver recipients' use of a common PLMN ID. Therefore, the FCC directed the petitioners to retain the services of a common entity to provide the clearinghouse functions associated with the use of a common PLMN ID and commercial roaming. The clearinghouse must be selected either through a competitive process or through the assistance of a federal agency.

"Because the petitioners will be utilizing a common PLMN ID, a common clearinghouse must be put in place to support petitioners' ability to engage in commercial roaming," the FCC order said. "The capability to engage in commercial roaming is a critical requirement for the public safety broadband network, particularly as the earliest deploying petitioners seek to expand their geographic coverage."

Waiver recipients must submit their choice of clearinghouse for the FCC's approval by May 31 and certify its compliance with this requirement in the "Deployment" section of its July 2012 quarterly report. Petitioners must also seek approval from the FCC before assigning clearinghouse functions to another entity.

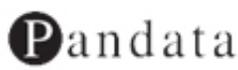
"We acknowledge that ... petitioners will ultimately bear the costs of developing the numbering scheme for their deployments and managing commercial roaming," said the order. "However, we observe that a numbering scheme is technically necessary to support their operation of LTE broadband networks and for them to be able to engage in commercial roaming. A shared cost approach, as is adopted here, is likely to be more cost effective than if each petitioner had to perform these services alone. We observe that all petitioners that have filed comments on this issue advocate a common PLMN ID approach."

Separately but on the same day as the FCC order, the PSCR released the first version of its network identifier guidelines at http://www.pscr.gov/projects/broadband/700mhz_demo_net/testing/PSCR_Network_Identifier_Demonstration_Network_Guidelines.pdf

This document represents the deliverable from the PSCR network identifiers study item. The network guidelines have the intent of a single PLMN ID within the concept of a nationwide public-safety LTE network, the guidelines said.

"PSCR will now start working with the vendors in our lab to begin implementing these guidelines into our demonstration network," said Emil Olbrich, program manager for PSCR. "This will allow PSCR to replicate the network identifier architecture required for a nationwide public-safety network and provide feedback to the study item stakeholders on the overall scheme."

The full FCC order is available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0109/DA-12-25A1.pdf.



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