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SUBSTANTIAL SERVICE SHOWINGS FOR 700 MHz STATE LICENSEES

EXECUTIVE SUMMARY

In 2002, the FCC granted a state license to all 50 states plus the District of Columbia, the Commonwealth of Puerto Rico, and the US Virgin Islands. Each license was for 2.4 MHz of non-contiguous 700 MHz narrowband spectrum and gave the state authority to construct anywhere within the state boundaries without (except in certain, limited circumstances) further site-specific licensing.

Holders of state licenses are required to comply with build-out deadlines, certifying that they are providing substantial service to a certain portion of the state's population or territory within a certain period of time. "Substantial service" is defined as the construction and operation of a system that provides "service that is sound, favorable and substantially above a level of mediocre service which just might minimally warrant renewal."

Current substantial service deadlines are:

- **June 13, 2014** – The state must be providing or prepared to provide substantial service to 1/3 of the state's population or territory.
- **June 13, 2019** – The state must be providing or prepared to provide substantial service to 2/3 of the state's population or territory.

To be considered "prepared to provide" substantial service, a state licensee must demonstrate that it has the system approved and funded for implementation prior to the deadline.¹

Public safety licensees have not been subject to this type of build-out deadline before. The National Public Safety Telecommunications Council (NPSTC) has developed a suggested procedure to be used by state license holders when filing a build-out notification certification.

Suggested Substantial Service Showing:

1. Location and basic parameters of sites constructed.
 - a. Frequencies, coordinates, ground elevation, and antenna height, ERP.²
2. Coverage contour (40 dBu) of each site with an explanation of how the contours were calculated
 - a. Use Census Bureau website to determine the population covered by each site (counties intersected by coverage).³

¹ Suggestion: During initial design and deployment, a substantial service estimate should be done to determine whether planned deployment will meet regulatory requirements.

² Issue to be resolved: Whether frequencies used in only a portion of the state are subject to take-back. A state may be bordered by several other states which limits the available state license frequencies from the outset. Such states can't use the 40 dBu coverage contour all the way to the state border because they have to reduce power in order to share with the adjacent states.

³ Alternate method would be to use a commercial coverage prediction program that provides population within the coverage contours.

- i. <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>
 - ii. Click on “Geographic,” then select “County,” and then select “all counties within [state].”
 - iii. You can download a csv file that shows the total population of each county or county-equivalent within the selected state (Column HD01).
 - iv. This data can be used to determine the population covered by each site, then added together to determine the total population covered by the state system and the percentage of the total state population covered by the state system.
 - b. Filing to the FCC would provide a certification that the state had met either 1/3 or 2/3 coverage requirement using the researched data.
 - c. Example: State A has a total population of 6 million. State A has constructed 10 sites in a major metropolitan area under its state authorization. The total population covered by these 10 sites based on counties intersected by coverage contours is 2 million, or 1/3rd of the overall state population. Each site’s specific data would be listed (see attached excel spreadsheet).
3. State licensees who constructed their state authorization through deploying vehicular repeaters (MO3s) would use contours from each permanent site with the population figures covered by each permanent site and an indication that the MO3s could operate anywhere within the contour.⁴
4. A caveat: State licenses DO NOT trump FAA and Quiet Zone constraints. Although states do not necessarily have to list all your locations, this does not allow them to construct and operate beyond the FAA and Quiet Zone constraints. To that degree, states proposing systems should keep in mind that they do have to get approval from the aforementioned bodies, where necessary, before implementing their respective systems. If there are any questions pertaining to those regulations, call the FCC 800 number, NPSTC, or one of the frequency coordinators.

⁴ Issue to be resolved: Historically, the FCC has not considered mobile-only use as protected – only systems with permanent sites were given exclusivity. Mobile-only operations have been secondary and can be co-channelled by site-based use at any time. Can MO3 usage in rural areas be considered sufficient justification of a “niche market.”? MO3 operations also cover the major interstate and state highways within a state – coverage of major transportation arteries.

EXAMPLE

[Date]

Public Safety and Homeland Security Bureau
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: First Substantial Service Showing Benchmark for Call Sign _____

To Whom It May Concern,

The [State/Commonwealth of _____] files the attached showing to demonstrate compliance with the first substantial service benchmark of coverage of 1/3 of the state population by June 14, 2014.

Rule section 90.529 (b)(1) requires the state to “certify on or before the applicable benchmark that it is providing or prepared to provide “substantial service” to one-third of their population or territory by June 14, 2014.” Rule Section 90.529 (c) states “The Commission will deem a state “prepared to provide substantial service” if the licensee certifies that a radio system has been approved and funded for implementation by the deadline date. “Substantial service” refers to the construction of 700 MHz facilities by public safety entities providing service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal.”

In certifying compliance with the initial benchmark, _____ [state] intends to demonstrate coverage to 1/3 of the state population. In determining the percentage of the state population covered by the CONSTELLATION network, the state used the Census Bureau (or state population data). Census Bureau data is available at: <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>.

The call sign referenced above is part of the [state name] CONSTELLATION network which is used for public safety and public service communications by the _____ State Police and _____ [#] other state government agencies, and facilitates interoperability with _____ [#] _____ [state] _____, city, and county public safety communications systems.

The CONSTELLATION system uses _____ [#] land mobile radio (LMR) transmitter sites to serve the entire state, and has coverage in each of the counties/cities in _____ [state]. CONSTELLATION provides geographic coverage for the entire state between 85% and 98% depending on the particular communications zone (there are _____ [#]). Public safety grade of coverage requires the transmitter sites to be optimized to cover each of these law enforcement operational zones. There are _____ [#] mobile and portable units in operation on the system.

Attached is a spreadsheet showing the CONSTELLATION transmitter sites, the frequencies constructed at each and the population covered. Also attached is the coverage contour of each transmitter site.

The [state/commonwealth] anticipates deploying _____ additional sites with _____ additional frequencies over the next 5 years which will result in compliance with the 2019 substantial service benchmark.

Engineering Studies

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