Project 25 Subscriber Radio Requirements

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The following characteristics are being considered as necessary for subscriber units to operate on the MOSWIN VHF Project 25 trunked radio system. They are:

Subscriber units intended to operate on the MOSWIN network **must** be certified under the Project 25 Compliance Assessment Program (CAP) and have been issued a Standard Declaration of Compliance (SDOC) that is posted on the www.rkb.us website, consistent with SAFECOM FY 2010 grant guidelines. The SDOC documents the results of testing associated with device performance, interoperability and conformance to the Project 25 standard. In addition, subscriber devices must also contain the following minimum characteristics to operate on the MOSWIN network:

- Devices must operate throughout the 138-174 MHz VHF High band
- Devices must have a maximum transmitter power output of 50 watts
- Devices must be capable of operating in the Project 25 Trunked Mode (Phase 1 FDMA)
- Project 25 radios operating on MOSWIN must utilize, at a minimum, the IMBE (Baseline) P 25 vocoder. However, agencies should strive to utilize the Project 25 Enhanced Full Rate Vocoder (AMBE + 2) as it is available on newer radios from multiple manufacturers and outperforms in all scenarios any previous full or half rate vocoder in areas of noise suppression and voice clarity.
    - The AMBE + 2 vocoder is the **preferred** Project 25 vocoder for use in the MOSWIN network.
- Devices must contain a 128 Control Channel Capacity (Minimum)
- Devices should have 512 available channels/modes (Minimum)

- Device should have a roaming algorithm that takes into consideration Receive Signal Strength Indicator (RSSI) and Adjacent Site System Information.
- Device should be able to able to scan for Control Channels, including adjacent site Control Channels, across the full range of the VHF High Band spectrum radio (138-174 MHz).
- Device must be capable of having a "preferred" system site list established for specific radios operating within defined areas. This is necessary to manage system capacity.
- Device must utilize a "System Key" or other technology that allows MOSWIN system administration to confirm, via the network, that the subscriber unit is a valid, authorized subscriber and that it should be permitted access to the system.
- Device must be capable of Advanced Project 25 Control Channel functionality that enables *explicit* trunking. *Due to the lack of standardized channel pairings in the public safety VHF High Band spectrum allocation, higher tier P 25 control channel functionality is required in subscriber devices on the MOSWIN network for it to be able to <u>explicitly</u> trunk and specifically assign unique, site based VHF channel pairings to a subscriber radio based on channels available, thereby enabling the subscriber to access the network. This specific method of granting a channel is a more extensive process for the network's Control Channel than in <u>implicit</u> trunking, where the channel pairings are standardized and a reduced amount of messaging on the Control Channel dedicated to channel granting is required for each channel assignment.*

In addition to the above criteria, subscriber units proposed for use on MOSWIN need to be tested on the MOSWIN network to ensure consistent operation. Experience in other states, using both VHF High Band and 700/800 MHz Wide Area trunked systems, indicates that field testing of subscriber units prior to system certification is necessary to ensure that the full functionality of the subscriber is achievable and expectations of the users are verified. Those field tests include roaming throughout a system to ensure the subscriber

transfers across all the zones of a system and we look forward to working with the vendor community on developing those tests. The Missouri Department of Public Safety anticipates developing a certification process in which subscriber units from multiple manufacturers can be approved to operate on MOSWIN.

Any additional questions on the MOSWIN Project 25 requirements listed above, contact Stephen Devine at 573-522-2382 stephen.devine@dps.mo.gov