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## Understanding FCC Narrowbanding Requirements

### Key Points

- Most current public safety radio systems use 25 kHz-wide channels.
- The Federal Communications Commission (FCC) has mandated that all non-Federal public safety licensees using 25 kHz radio systems migrate to narrowband 12.5 kHz channels by January 1, 2013.
- Agencies that do not meet the deadline face the loss of communication capabilities.
- Agencies need to start planning now to migrate to narrowband systems by assessing their current radio equipment and applying for new or modified licenses.

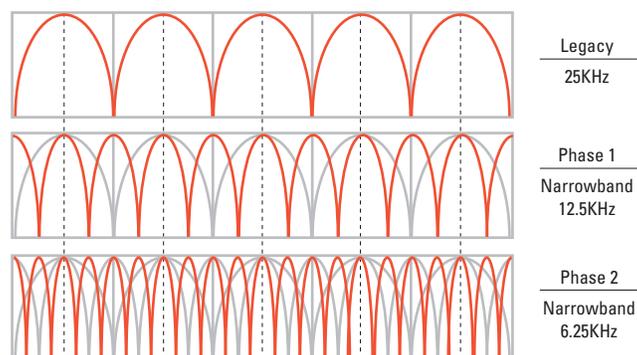
### OVERVIEW

Private land mobile radio (LMR) systems—including municipal government and State and local public safety systems—use blocks of radio spectrum called channels.<sup>1</sup> Historically, LMR systems have used 25 kHz-wide channels. In December 2004, the Federal Communications Commission mandated that all private LMR users operating below 512 MHz move to 12.5 kHz narrowband voice channels and highly efficient data channel operations by January 1, 2013.<sup>2</sup> This migration complements a National Telecommunications and Information Administration mandate for more rapid Federal agency migration to 12.5 kHz narrowband operation by January 1, 2008. The earlier Federal deadline affects State and local FCC licensees that interface or share frequencies with Federal radio systems.<sup>3</sup>

Using narrowband channels will ensure that agencies take advantage of more efficient technology

and, by reducing channel width, will allow additional channels to exist within the same spectrum space, as illustrated in figure 1.

Figure 1. Narrowband channels allow additional channels to exist in the same spectrum.



## DEADLINES

To phase in the migration deadline of January 1, 2013, the FCC has established interim deadlines. The first important deadline is January 1, 2011, after which:

- The FCC will not grant applications for new voice operations or applications to expand the authorized contour of existing stations that use 25 kHz channels. Only narrowband authorizations will be granted.
- The FCC will prohibit manufacture or importation of new equipment that operates on 25 kHz channels. This will reduce the availability of new equipment for legacy radio systems and will affect how agencies maintain and upgrade older systems.

## PLANNING FOR THE MOVE TO NARROWBAND

Public safety agencies need to aggressively develop a strategy to meet narrowband deadlines to avoid cancellation of existing wideband FCC authorizations. Although the migration deadline may seem far off, the long lead time and interim deadlines make it necessary for agencies to plan well in advance.

**Assess current equipment and start planning.** To prepare for the migration, public safety agencies should start assessing their radio systems and planning for replacements or upgrades. They should inventory their current equipment to ascertain what can be converted to 12.5 kHz and what will need to be replaced before January 1, 2013. Most new equipment has the capability for both 25 kHz and 12.5 kHz operation because any VHF/UHF radio equipment accepted by the FCC after February 14, 1997, had to have 12.5 kHz capability. The 2.5 kHz narrowband equipment is available in both conventional analog FM and digital formats (such as Project 25), so narrowband conventional FM systems will be compliant. Local governments should develop contingency plans to accommodate system changes for both public safety and nonpublic safety systems.

**Obtain new or modified licenses.** To move to narrowband operations, agencies must apply for new frequencies or modify existing licenses. An agency that is licensed for a 25 kHz-wide channel is not guaranteed two 12.5 kHz channels. Licensees will have to justify to the FCC why they need additional channels. Consideration of applications for new narrowband licenses will follow the same process as a new license application. As agencies migrate to narrowband operation, however, the pool of available frequencies will increase.

## FOR MORE INFORMATION

- NIJ's Communications Technologies (CommTech) Web site:  
[www.ojp.usdoj.gov/nij/topics/commtech](http://www.ojp.usdoj.gov/nij/topics/commtech)
- Federal Communications Commission Web site:  
[www.fcc.gov](http://www.fcc.gov)
- Regional National Law Enforcement and Corrections Technology Centers:  
[www.justnet.org](http://www.justnet.org)

## NOTES

1. For more information about spectrum allocation and the licensing process, see NIJ InShort, *Radio Spectrum*, NCJ 214962, August 2006.
2. Per the FCC mandate, post-narrowbanding data channels must have an efficiency of 4.8kbps/second/6.62KHz. See FCC Order 05-9, WT Docket No. 96-86, January 7, 2005: [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-05-9A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-9A1.pdf); and FCC Order 04-292, WT Docket No. 99-87 and RM-9932, December 23, 2004: [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-04-292A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-292A1.pdf).
3. FCC narrowbanding rules for agencies operating with FCC licenses but using Federal spectrum are frequency specific and may follow a more aggressive schedule. Those agencies may operate on these frequencies only on a secondary (unprotected and noninterfering) basis. See FCC Report and Order 05-69, ET Docket No. 04-243, March 11, 2005: [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-05-69A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-69A1.pdf).

