General Information on VHF/UHF Narrowbanding
Narrowbanding Basics

- Who is affected by narrowbanding?
  - All Public Safety and Industrial/Business licensees in the 150-174 MHz and 421-512 MHz bands

- What do affected licensees have to do?
  - Either migrate to 12.5 kHz technology or utilize a technology that achieves equivalent efficiency
Timeline

- **January 1, 2011 (Interim Deadline)**
  - FCC will not accept applications for new systems using 25 kHz channels, or modification applications that expand the authorized contour of an existing 25 kHz station
  - FCC prohibition on manufacture, importation, or certification of equipment that includes a 25 kHz mode
  - Applications for Part 90 transmitter certification must certify that equipment meets a spectrum efficiency standard of one voice channel per 6.25 kHz of channel bandwidth

- **January 1, 2013**
  - All Public Safety and Industrial/Business licensees in the 150-174 MHz and 421-512 MHz bands must either migrate to 12.5 kHz technology or utilize a technology that achieves equivalent efficiency
A Brief History

- Process began in 1991
- Equipment required to be narrowband capable in 1996
- Second R&O (2003)
  - Licensees given deadlines to migrate to 12.5 kHz technology or utilize a technology that achieves equivalent efficiency
    - Non-Public Safety Deadline: January 1, 2013
    - Public Safety Deadline: January 1, 2018
  - Delayed all 2nd R&O interim deadlines to January 1, 2011
  - Accelerated public safety narrowbanding deadline from January 1, 2018 to January 1, 2013, consistent with the Industrial/Business deadline
    - The Commission found that the 10-year period from 2003 to 2013 was sufficient time to allow public safety to plan for transition and amortize existing equipment
    - The Commission noted that public safety commenters “unanimously” represented that they could meet the 2013 deadline
Reasons to Narrowband

- Opportunity
- Compliance
- Interoperability
- Interference
- Obsolescence
Narrowbanding is intended to ensure more efficient use of the spectrum and greater spectrum access for public safety and non-public safety users.
VHF - 150 MHz to 174 MHz

Prior to Narrowbanding

25 kHz 25 kHz
25 kHz 25 kHz
25 kHz 25 kHz

After Narrowbanding

12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz
12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz
12.5 kHz 12.5 kHz 12.5 kHz 12.5 kHz
UHF - 450 MHz to 512 MHz

Prior to Narrowbanding

After Narrowbanding
Compliance

- Narrowbanding is mandatory
- Non-compliant stations are prohibited, not secondary
- Non-compliance can negatively impact public safety
May not be able to communicate with systems operating on new narrowband channels

Even if communications are possible they may be degraded
  - Wideband transmitter may overload narrowband receiver
  - Narrowband transmitter may not generate enough signal on wideband receiver
Interference

- In January 2013, 25 kHz channels will no longer be protected.
- Continued wideband operations will not only violate FCC rules but also cause harmful interference to adjacent narrowband channels.
Obsolescence

- The record in this proceeding indicated that 25 kHz equipment typically fully depreciates over a seven-year period
- Wideband-only equipment is at least 12 years old
- Wideband-capable equipment will not be available after 2011
- As a system ages support for the system becomes scarcer and more expensive
First Steps

- Assess whether 150 & 450 MHz channels meet long term needs – consider 700 & 800 MHz
- Since all equipment since 1997 has a narrowband mode, narrowbanding may require no more than programming.
- New VHF/UHF systems should be narrowband only
Path to Compliance

- Inventory equipment subject to narrowbanding
- Determine if additional sites will be needed to compensate for the narrower bandwidth
- Determine if pagers will require replacement
- Establish a schedule to meet the 2013 date
- Get a funding cycle approved
- Commission will provide guidance as to how license modification will occur
Funding

- Many grant programs have language that support operability and interoperability and/or emergency communications components.
- For additional information contact:
  - DHS’s Office of Emergency Communications
    - E-mail: oec@hq.dhs.gov
  - FEMA
    - www.fema.gov/grants
The Commission has declined, for the time being, to establish a schedule for the further migration from 12.5 kHz to 6.25 kHz.

The Commission has sought comment as to whether applications to modify a license to reduce the authorized bandwidth should be exempt from frequency coordination requirements. See Notice of Proposed Rulemaking and Order, WT Docket No. 07-100 (2007).

In March 2009, PSHSB granted a waiver to permit the Town of New Haven, Vermont to reduce its bandwidth without frequency coordination.

On September 30, 2009, the National Public Safety Telecommunications Council submitted a petition for stay of the implementation of the January 1, 2011 interim deadlines.
Narrowbanding Brochure

- Developed by IMSA and IAFC in 2006
  - 10,000 Print Copies Distributed
  - PDF Version Available On-Line

- Contents
  - Introduction to Narrowbanding
  - FCC’s Narrowband Rules
  - Practical and Technical Considerations
  - Conclusions
Narrowbanding Brochure

- Short Read – Easy To Understand
  - Ideal for end user
  - Explains who, what and when
  - Tool to support funding requests

- Availability
  - Download a PDF version from www.IMSAsafety.org
  - Request print copies from IMSA at same site
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