Federal Communications Commission
Public Safety and Homeland Security Bureau

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
- Third MO&O (2004)
  - 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

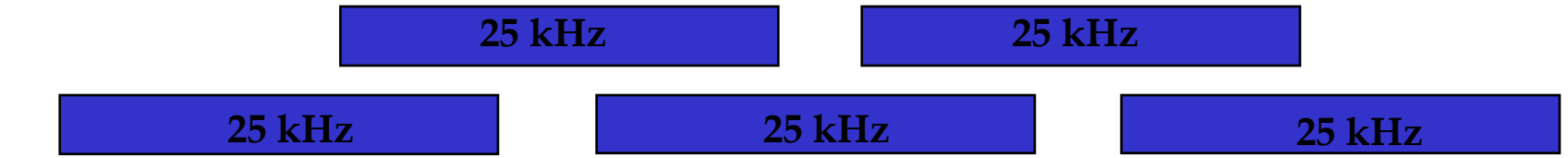
Reasons to Narrowband

- Opportunity
- Compliance
- Interoperability
- Interference
- Obsolescence

Opportunity

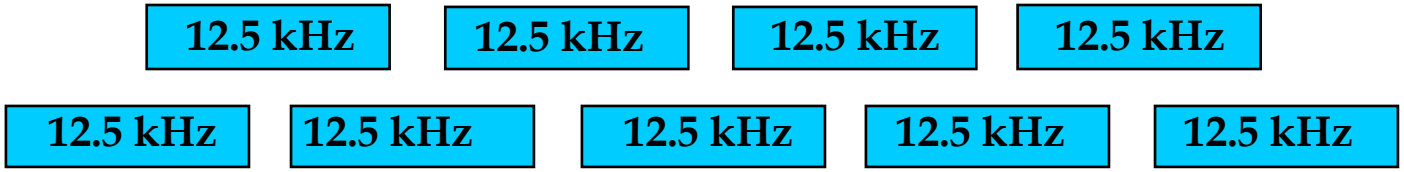
- Narrowbanding is intended to ensure more efficient use of the spectrum and greater spectrum access for public safety and non-public safety users

VHF - 150 MHz to 174 MHz

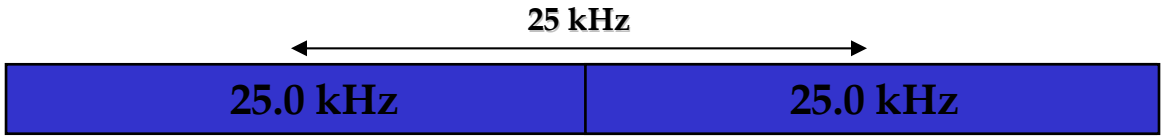


Prior to Narrowbanding

After Narrowbanding



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

Interoperability

- 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

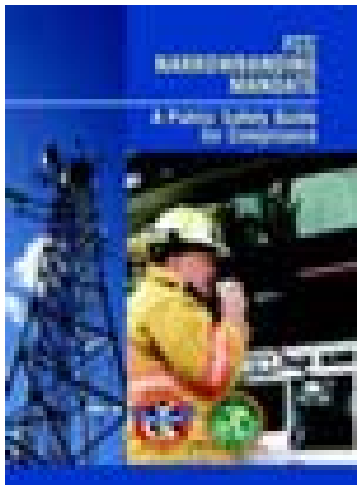
- Many grant programs have language that support operability and interoperability and or emergency communications components
- For additional information contact
  - DHS's Office of Emergency Communications
    - E-mail: oec@hq.dhs.gov
  - FEMA
    - www.fema.gov/grants

Additional Thoughts

- 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

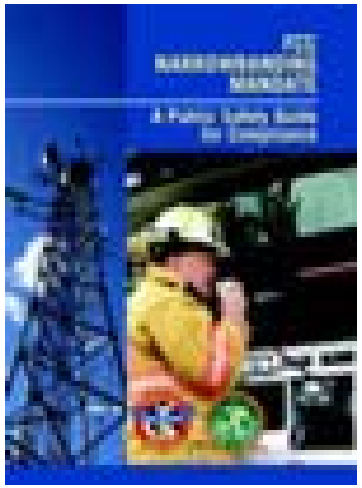
- Developed by IMSA and IAFC in 2006
  - 10,000 Print Copies Distributed
  - PDF Version Available On-Line



- 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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