FCC Narrowbanding Panel

Narrowbanding Procrastination

The Mayan Calendar ends on 12/31/2012.
The narrowband deadline is 12/31/2012.
What? Me worry?

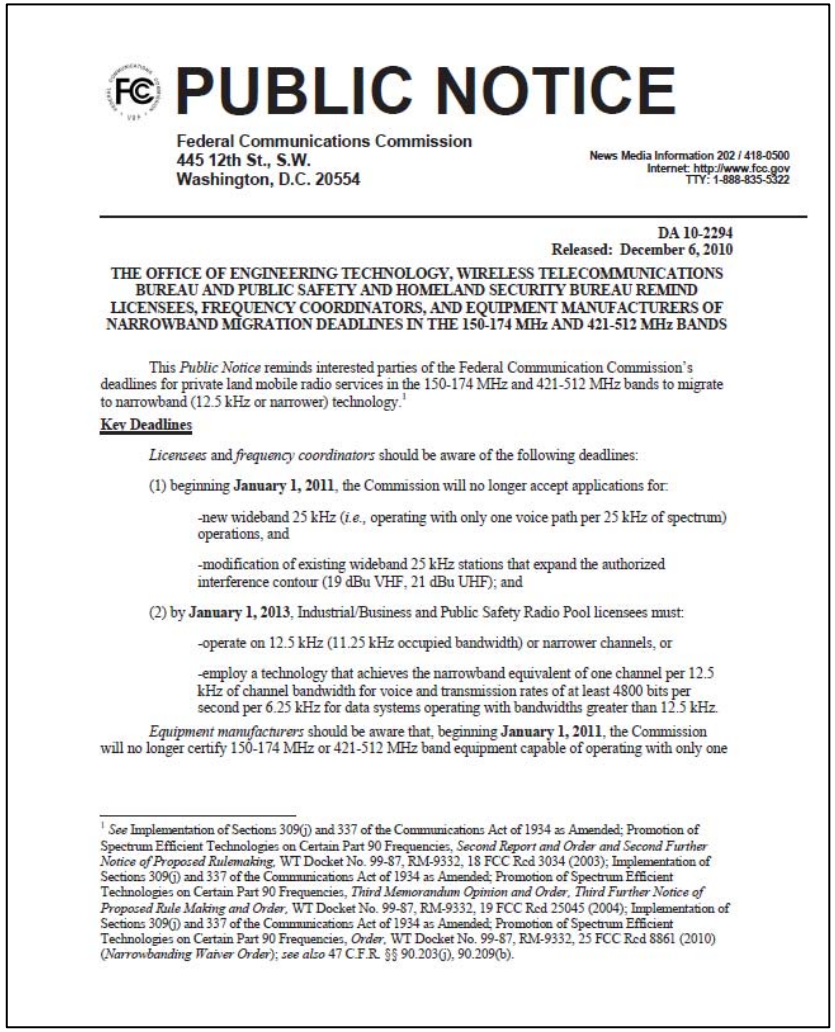
Motorola Narrowbanding Efforts

- FCC Requirements for Narrowbanding
- Education for Customers and Dealers
- Customer Awareness Evaluation
- System Migration

FCC Requirements for Narrowbanding

FCC Rules

- **Series of Orders over 15 years**
- **Public Notices:**
  Dec. 11, 2009 and Dec. 6, 2010
- **June 30, 2010 Order**
  (Interim Dates)
- **Code of Federal Regulations**
  - Licensee Deadlines
    - CFR 90.209 (b)(6)(i)
    - CFR 90.209 (b)(6)(ii)
    - CFR 90.209 (b)(5)
  - Manufacturer Deadlines
    - CFR 90.203 (j)(3)
    - CFR 90.203 (j)(4)
    - CFR 90.203 (j)(5)
    - CFR 90.203 (j)(10)



PUBLIC NOTICE

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

News Media Information 202 / 418-0500
Internet: http://www.fcc.gov
TTY: 1-888-835-5322

DA 10-2294
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THE OFFICE OF ENGINEERING TECHNOLOGY, WIRELESS TELECOMMUNICATIONS BUREAU AND PUBLIC SAFETY AND HOMELAND SECURITY BUREAU REMIND LICENSEES, FREQUENCY COORDINATORS, AND EQUIPMENT MANUFACTURERS OF NARROWBAND MIGRATION DEADLINES IN THE 150-174 MHz AND 421-512 MHz BANDS

This *Public Notice* reminds interested parties of the Federal Communication Commission's deadlines for private land mobile radio services in the 150-174 MHz and 421-512 MHz bands to migrate to narrowband (12.5 kHz or narrower) technology.[1]

Key Deadlines

Licensees and *frequency coordinators* should be aware of the following deadlines:

(1) beginning **January 1, 2011**, the Commission will no longer accept applications for:

-new wideband 25 kHz (*i.e.*, operating with only one voice path per 25 kHz of spectrum) operations, and

-modification of existing wideband 25 kHz stations that expand the authorized interference contour (19 dBu VHF, 21 dBu UHF); and

(2) by **January 1, 2013**, Industrial/Business and Public Safety Radio Pool licensees must:

-operate on 12.5 kHz (11.25 kHz occupied bandwidth) or narrower channels, or

-employ a technology that achieves the narrowband equivalent of one channel per 12.5 kHz of channel bandwidth for voice and transmission rates of at least 4800 bits per second per 6.25 kHz for data systems operating with bandwidths greater than 12.5 kHz.

Equipment manufacturers should be aware that, beginning **January 1, 2011**, the Commission will no longer certify 150-174 MHz or 421-512 MHz band equipment capable of operating with only one

[1] *See* Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, *Second Report and Order and Second Further Notice of Proposed Rulemaking*, WT Docket No. 99-87, RM-9332, 18 FCC Rcd 3034 (2003); Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, *Third Memorandum Opinion and Order, Third Further Notice of Proposed Rule Making and Order*, WT Docket No. 99-87, RM-9332, 19 FCC Rcd 25045 (2004); Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, *Order*, WT Docket No. 99-87, RM-9332, 25 FCC Rcd 8861 (2010) (*Narrowbanding Waiver Order*); *see also* 47 C.F.R. §§ 90.203(j), 90.209(b).

We've been talking about this for a long time…

- FCC started effort almost 20 years ago
- FCC Docket 92.235 Rule Making procedure began in 1992
- FCC Required 12.5 kHz equipment capability since 1997
- FCC set deadlines back in 2003, modified some interim dates in 2010
- We've provided narrowband equipment for over 13 years…

Education for Customers and Dealers

Getting the Word Out

- Training Dealers for the last 15 years
- Narrowbanding highlighted at key events
  - IWCE
  - APCO
  - IACP
  - FDIC
  - FRI
- Articles published in trade journals
- Created support materials for dealers and sales force
- Customer podcast
- 25 kHz and 12.5 kHz audio quality recordings
  - Website www.motorolasolutions.com/ narrowbanding

Customer Awareness Evaluation

Who Needs to Narrowband*

Licensees Requiring Narrowbanding				**163 K**
Call Signs Requiring Narrowbanding				**249 K**
Public Safety		31%	77 K	
Business/Industrial		69%	172 K	
Frequencies Requiring Narrowbanding**				**1,078 K**
Public Safety		31%	336 K	
VHF (150-174 MHz)	20%	214 K		
UHF (421-512MHz)	11%	122 K		
Business / Industrial		69%	742 K	
VHF (150-174 MHz)	22%	234 K		
UHF (421-512MHz)	47%	458 K		

* Based on licensees with 25 kHz emission only, per FCC license database
** Number of licensed channels based on reuse across the country

as of Dec. 2010

Narrowbanding

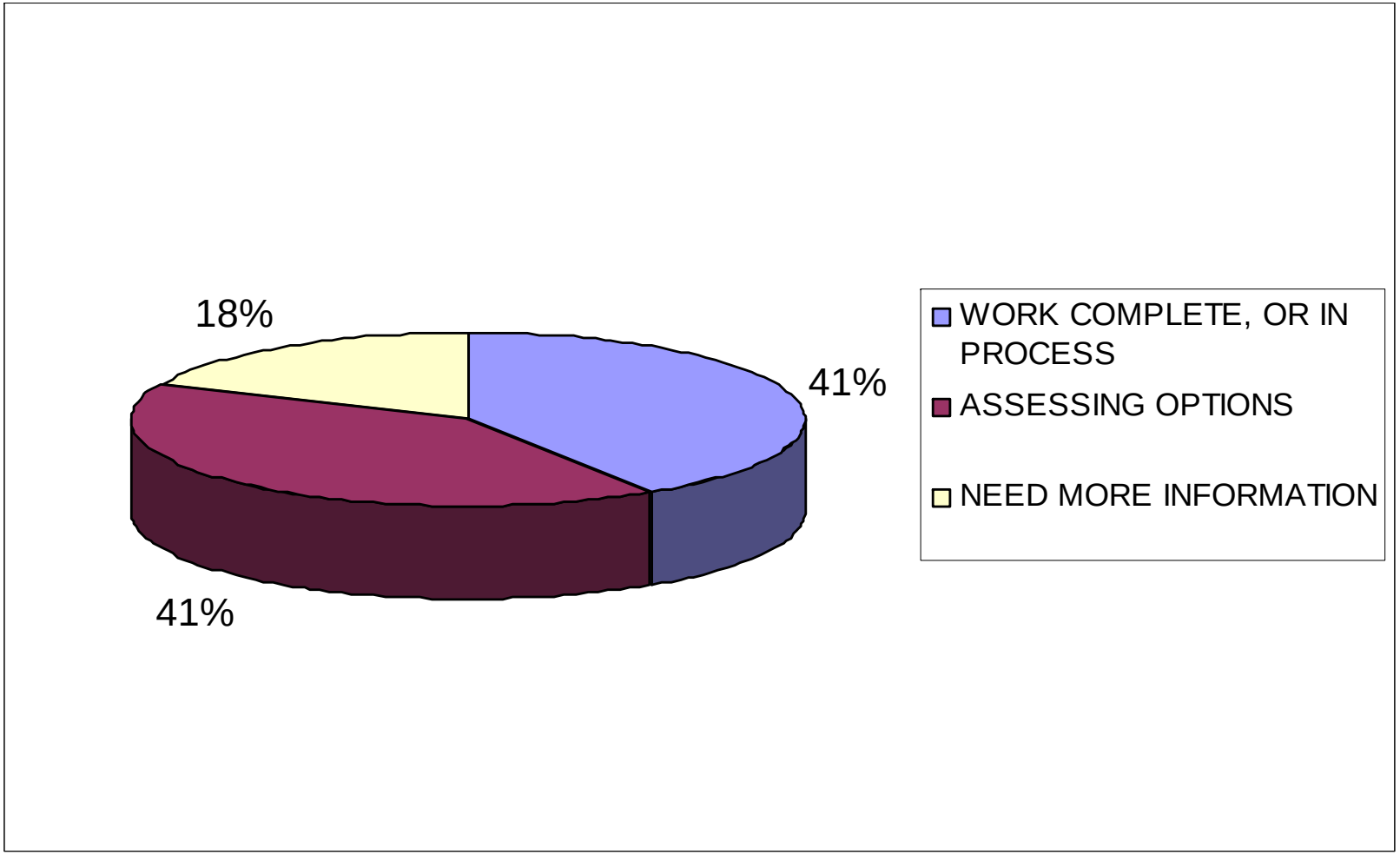
Telequalification Research

Results to date (2,195 responses)

"Are you aware of the FCC narrowbanding mandate which requires 25 kHz two-way radio equipment be eliminated by January 1, 2013?"

	Government	Business/ Industrial	Total
Yes, aware of mandate and currently meet mandate	**289 (32%)**	**260 (20%)**	**549 (25%)**
Yes, aware of mandate and have a plan in place to meet mandate	**474 (52%)**	**499 (39%)**	**973 (44%)**
Yes, aware of mandate but no plans in place yet	**89 (10%)**	**234 (18%)**	**323 (15%)**
No, not aware of mandate	**52 (6%)**	**298 (23%)**	**350 (16%)**
TOTAL	**904 (100%)**	**1,291 (100%)**	**2,195 (100%)**

Status Summary
Government Customers ~ 1800 Licensees 300 Units



System Migration

Narrowbanding Alternatives

- If going from 25 kHz analog to 12.5 kHz analog:
- Move to another band
- Go to digital 12.5 kHz (FDMA or TDMA) system

Narrowbanding Alternatives Con't

- Migrating from 25 kHz analog to 12.5 kHz analog:
  - Evaluate subscriber fleet
    - Are radios capable of migrating to 12.5 kHz
    - If not, plan on replacement
  - File license modification with FCC
    - Adding NB emission designator
    - Frequency Coordination (If required)
  - Reduce deviation on the transmitter
    - Do simulcast systems a channel at a time
  - Narrowband subscriber fleet
  - Narrowband infrastructure receivers
  - Validate proper system operation.

Narrowbanding Alternatives Con't

- Move to another band
  - 700/800 MHz Systems
  - 900 MHz Systems
- Go to digital 12.5 kHz (FDMA or TDMA) system
  - No degrading in coverage of 25 kHz analog system, may even provide better coverage
  - Adds enhanced features
  - Backward compatible with analog radios
  - 12.5 kHz TDMA meets any FUTURE 6.25 kHz equivalent efficiency FCC requirements
  - FDMA and TDMA systems are available today

Thank You

Questions?