Public Safety 700 MHz Band Recommendations

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Lucent Technologies
Bell Labs Innovations

Broadband vs. Wideband

Today's Broadband Technologies are ~10 Times More Spectrally Efficient than Wideband

At Like Data Rates and Coverage Criteria, Today's Broadband Technologies Offer Ranges Comparable to TIA-902

- Broadband technologies are the right answer for urban, suburban and rural environments

Broadband Technologies offer Cost Advantages Absent in Wideband Technologies

- Scale economies through re-banding of existing commercial broadband technologies
- Robust, competitive ecosystem largely absent from today's public safety market

Pitfalls of Mixed Broadband + Wideband Band Plans

RPCs manage spectrum locally (flexibility) with nationwide implications:

- Broadband + Wideband Hampers Interoperability
  - Multimode devices required, network evolution hampered
- Broadband + Wideband Fragments Greenfield Spectrum
  - Preserving contiguous blocks of broadband spectrum today essential for use of broadband technologies tomorrow
- Broadband + Wideband Wastes Spectrum
  - Broadband technologies today are an order of magnitude more spectrally efficient than wideband. This gap will continue to widen.

"…any application that will run on a wideband network can also run, faster and supporting more simultaneous users, on a broadband network (while the reverse is not necessarily true)."

Comments of the Spectrum Coalition for Public Safety (Docket 96-86)

Benefits of a Broadband-only Plan

Makes Best Use of Limited Public Safety Spectrum

Encourages Deployment of Cooperative Regional Networks

- Increased Spectral efficiency through use of spectrally efficient broadband technologies, pooling of spectrum resources
- Cross-Agency, Cross-Jurisdiction Interoperability by design

Aligns Public Safety Broadband with Commercial Market Forces

- Scale Economies, R&D investment

Easier Frequency Planning

- Same channels used in adjacent sectors

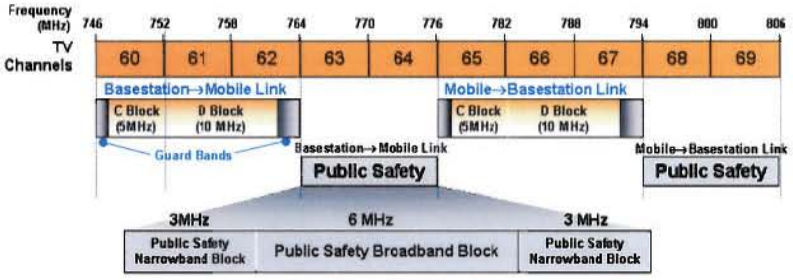
Supports <u>All</u> Envisaged Public Safety Applications

Benefits of a Single Broadband Technology

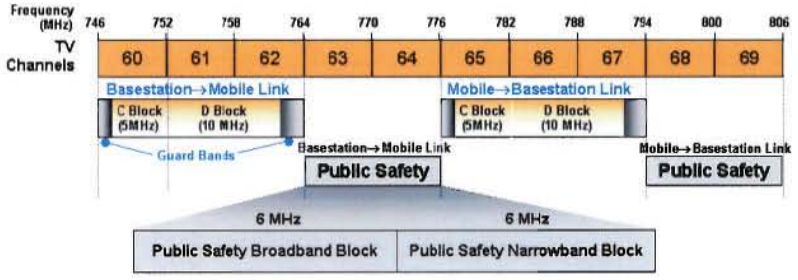
Open, High-Volume Standards Supported by Multiple Vendors

- Interoperability
- Scale Economies
- Innovation
- Technology Evolution
- Backward Compatibility as Technology Evolves
- Best Use of Public Funds

Benefits of a 6+6 Restructuring of the Public Safety 700 MHz Band



3+6+3 Plan



6+6 Plan

Lower risk of intermodulation distortion in narrowband receivers

Smaller amount of spectrum reserved for overall guardband

- Cellular-like broadband deployments in public safety and D block
  - Smaller guardbands required between public safety broadband and the D block

Lucent Recommendations for Public Safety 700 MHz Band

Adopt a Broadband-only 6 MHz Broadband Block

Specify 1.25 MHz as Basic Broadband Channel Size

- Allow aggregation of multiple 1.25 MHz Broadband Channels

Restructure PS700 MHz into 6 MHz Broadband + 6 MHz Narrowband Blocks

- Provides greatest protection for narrowband services