



Saving Lives and Property Through Improved Interoperability

***Summary—The Consensus Plan
Submitted by the Joint Commenters in
the Matter of WT Docket 02-55***

FINAL

August 2002

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I. INTRODUCTION

With the submission of the Nextel Communications, Inc. White Paper on November 21, 2001, the Federal Communications Commission (Commission) entered the major undertaking of remedying the interference experienced by public safety users in the 800 megahertz (MHz) band. This white paper was the first of the series of proposed solutions that the Commission and commenters on WT Docket No. 02-55 must consider in resolving these issues of interference in that band.

Although many different ideas and solutions were proposed through the comments, the most widely supported proposal was submitted by the Joint Commenters. This plan to alleviate the troublesome interference in the 800 MHz band has been dubbed the *Consensus Plan*. The groups that contributed to that resolution and support it are—

- Public Safety Organizations
 - Association of Public-Safety Communications Officials-International, Inc. (APCO)
 - International Association of Chiefs of Police (IACP)
 - International Association of Fire Chiefs, Inc. (IAFC)
 - International Municipal Signal Association (IMSA)
 - Major Cities Chiefs Association (MCC)
 - Major County Sheriffs' Association (MCSA)
 - National Sheriffs' Association (NSA)

- Private Wireless Coalition
 - Aeronautical Radio, Inc. (ARINC)
 - American Mobile Telecommunications Association (AMTA)
 - American Petroleum Institute (API)
 - Association of American Railroads (AAR)
 - Forest Industries Telecommunications (FIT)
 - Industrial Telecommunications Association, Inc. (ITA)
 - Personal Communications Industry Association (PCIA)
 - Taxicab, Limousine, and Paratransit Association (TLPA)

- Nextel Communications, Inc. (Nextel).

II. BACKGROUND

The Commission immediately noted the agreement among comments submitted on WT Docket No. 02-55 that the public safety–Commercial Mobile Radio Service (CMRS) interference was “a serious interference problem...that deserves resolution.”¹ The Commission also noted that contained within many of the comments submitted by public safety agencies, were listings of substantial costs incurred by these agencies in resolving the interference. The dangerous levels of interference affecting every user in the band, coupled with the increasing costs to already financially strapped agencies, “necessitates a realignment of the Commission’s 800 MHz band plan and revision of its interference policies at 800 MHz.”²

When Nextel submitted its white paper in November 2001, it signaled the beginning of the resolution process. This initial plan called for the realignment of the band into two blocks, a 20 MHz block for public safety to be located at 806–816/851–861 MHz, and 16 MHz for digital CMRS networks to be located at 816–824/861–869 MHz. A guard band was also proposed at 814–816/859–861 MHz to provide an additional buffer for public safety. Nextel offered to pay \$500 million toward the retuning of the public safety equipment. The paper also suggested that the Business and Industrial/Land Transportation (B/ILT) licensees and Specialized Mobile Radio (SMR) systems could either remain on the band as secondary, non-interfering users, or relocate, at their own cost, to the 700 MHz or 900 MHz band to spectrum given up by Nextel. Finally, Nextel requested that it be issued the 2020–2025/2170–2175 MHz block of spectrum in exchange for giving up its lower band spectrum.³

A second proposal, drafted by the Private Wireless Coalition (PWC), suggested a vastly different approach. To help resolve the public safety interference, the document recommended moving all 800 MHz public safety operations to the upper 700 MHz band located at 747–762/777–792 MHz. This transition would be the most desirable for the majority the public safety in the long term. However, this proposal was unreasonable and unrealistic because it required passage of three pieces of critical legislation by the U.S. Congress.⁴

The PWC developed a second proposal that suggested retuning the current public safety equipment to 806–811/851–856 MHz, which would create a continuous block of public safety spectrum into the 700 MHz allocation. This proposal also called for B/ILT and traditional SMR licenses to retune to 811–816/856–861 MHz, while cellularized SMR licenses would retune to 816–824/861–869 MHz. There was no provision for cellular-like system architectures in either the public safety band or B/ILT and traditional SMR bands.⁵

¹ Notice of Proposed Rulemaking (NPRM), *In the Matter of Improving Public Safety Communications in the 800 MHz Band and Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels*, WT Docket No. 02-55, Adopted March 14, 2002, Released March 15, 2002, at para. 20.

² See Reply Comments of the Joint Commenters, at p. 4.

³ *Id.*, at pp. 4–5.

⁴ *Id.*, at p. 6.

⁵ *Id.*, at p. 7.

III. DISCUSSION

The Joint Commenters begin the discussion by pointing out that their plan would address the issues required by the Commission, which were interference elimination, minimum disruption to existing services, and provision of sufficient spectrum for public safety.⁶ The Joint Commenters also note that the Consensus Plan recognized the needs of the existing licensees in the band.

A. The Consensus Plan

The Joint Commenters quote several comments that indicate the root cause of the interference is the mix of the cellular CMRS architecture and the traditional public safety infrastructure in the band.

1. The Commission Should Establish Two Separate Contiguous Spectrum Blocks at 800 MHz to Separate Non-Cellular and Cellularized Systems

The Joint Commenters agree that the mix of the two types of system architectures leads to interference problems and recommend that the Commission establish two contiguous blocks of spectrum in the 800 MHz band. The first block would be located at 806–816/851–861 MHz and contain non-cellular (i.e., high-power, high site) systems, while the second would be located at 816–824/861–869 MHz and contain cellular-like (i.e., low-power, low-site) systems.⁷ Specifically, only public safety, B/ILT, and SMR licenses could be licensed in the non-cellular block, assuming they would be operating non-cellular architecture systems.

The plan also calls for a 2 X 2 MHz block created as a guard band located at 814–816/859–861 MHz to create additional protection from the neighboring cellular operations.⁸ Due to the guard band's close proximity to the band used by cellular operations, the Joint Commenters suggest campus-type systems for this guard band because they would be more resistant to any cellular interference. Current licensees in this band could continue to operate according to their present licensees except for public safety systems that should consider relocation to avoid interference.

The Consensus Plan would specifically prohibit systems in the non-cellular band that consist of more than five overlapping interactive sites with hand-off capability, sites with antenna heights of less than 100 feet on heights above average terrain (HAAT) of less than 500 feet, and sites with more than 20 paired frequencies.⁹ The cellularized block that currently contains the Upper 200 SMR channels and the former National Public Safety Planning Advisory Committee (NPSPAC) block, would serve as a home for the cellular operators initially operating in the lower, non-cellularized block.

⁶ See NPRM at para. 26.

⁷ See Comments of the Joint Commenters at p. 9.

⁸ Id.

⁹ Id., at p. 10.

2. NPSPAC/General Category Movement—Timing and Logistics

The Joint Commenters propose to move the operations in the current 3 X 3 MHz NPSPAC operations on a channel for channel basis into the current General Category Pool at 806–809/851–854 MHz.¹⁰ They add that incumbent public safety, B/ILT, and traditional SMR operators should not be required to move. The plan proposes that any move of NPSPAC channels must uphold the existing regional plans and relative channel assignments. The suggested method would involve a one-to-one “mapping down” of the current assignments by 15 MHz to the 806–809/851–854 MHz block.¹¹ This particular band is attractive because it is contiguous to the new 700 MHz public safety band.

The plan proposes a five-step plan for the relocation of the NPSPAC channels:

First, any public safety licensee operating in the 806–809/851–854 MHz block or the 814–816/859–861 MHz block would trade, on a one-for-one basis, with a Nextel channel in the 809–814/854–859 MHz block. Those public safety incumbents located in the proposed guard channel that could be susceptible to interference could choose to relocate themselves to the 809–814/854–859 MHz band. The plan proposes that the daily, critical public safety communications immediately needed in the 814–816/859–861 MHz band should either relocate to the lower portion of the proposed non-cellular block or rearrange channel usage so that the less critical channels are located closer to the cellularized systems.

Second, any non-Nextel, site-licensed SMR or B/ILT licensees on the 806–809/851–854 MHz band would relocate, on a one-for-one basis, to the following bands, depending on availability, in this order: 814–816/859–861 MHz guard band that would be vacated by public safety, 814–816/859–861 MHz band that would be vacated by Nextel, and 809–814/854–859 MHz band that would be vacated by Nextel.¹²

Third, non-Nextel economic area (EA) licensees, which would be the last group to relocate from the 806–809/851–854 MHz band, would receive spectrum allotments equivalent to both existing site licensees and the white space benefit in their current EA license. These licensees on channels 1–120 in the General Category pool would receive similar blocks of the lower 80 EA licenses vacated by Nextel. The licensees may also return to channels 125–150 as available. This retuning would occur after the first construction deadline for General Category EA licenses—the earliest date would be December 20, 2003.¹³ Public safety licenses would be exempt for 5 years from defaulting to the non-public safety EA licensees. At the completion of the first three steps, Nextel would temporarily occupy the entire 806–809/851–854 MHz band to facilitate and simplify the relocation of the NPSPAC channels.

¹⁰ Id., at p. 11.

¹¹ Id.

¹² Id., at p. 13.

¹³ Id.

Fourth, the NPSPAC licensees would relocate from the 821–824/866–869 MHz band to the 806–809/851–854 MHz band through a system-by-system swap with Nextel.¹⁴ When a NPSPAC system was ready to vacate, the Nextel would vacate the associated channels. The level of interference experienced and population density would prioritize the swapping process. In the end, Nextel would receive a 6 MHz license as each region was cleared. As part of this step, any relocation must occur without disruption to the critical public safety communications and must be contingent upon the relocation expenses being paid by Nextel or another third party.

Fifth, Nextel must clear itself from any remaining channels in the 809–816/854–861 MHz block. Nextel and other cellular operators continuing to cause harmful interference must continue to resolve any complaints on a case-by-case basis.

4. Treatment of Additional Vacant Spectrum

The plan proposes that once a region completes the relocation process and spectrum remains vacant, that spectrum could only be assigned to public safety use for the following 5 years. After that 5 years, any unclaimed spectrum would also be available for B/ILT and high-site SMR operations. The Joint Commenters note that a study of 66 markets indicates that, in most cases, the rebanding would create additional spectrum available for public safety.

5. Mexican/Canadian Border Regions

The Joint Commenters acknowledge the need for a detailed plan to re-align the spectrum in the Mexican and Canadian border regions and state that they would provide such a plan in the future.

6. Implementation Coordination

The Joint Commenters advise that the implementation of such an ambitious relocation would require significant coordination among the interested parties. They ask that the Commission direct Nextel, the Land Mobile Communications Council (LMCC), public safety coordinators, and the Regional Planning Committees (RPC) to develop the bandplan proposed in the Consensus Plan. It is also suggested that this comprehensive bandplan be tied to a date certain. Once the groups finalize the plan, it should be submitted to the Commission for approval.

7. Return of 700 MHz, 800 MHz, and 900 MHz Spectrum by Nextel

As part of the rebanding, the Joint Commenters propose that Nextel return its 700 MHz (4 MHz of spectrum in 40 markets) and 900 MHz (4 MHz of spectrum) band allocations to the Commission, while also contributing 2.5 MHz of spectrum in the 800 MHz band.¹⁵ Nextel's 700 MHz Guard Band allotments would be converted to public safety use, while the 900 MHz spectrum would be re-assigned to B/ILT and traditional SMR use. To aid the release of

¹⁴ Id., at p. 14.

¹⁵ Id., at p. 18.

additional spectrum for public safety use, it is proposed that if a B/ILT or traditional SMR incumbent in 806–816/851–861 MHz want to voluntarily relocate to the 900 MHz band, the incumbent would receive a 50 kilohertz (kHz) assignment for each 25 kHz assignment vacated in the 800 MHz band.¹⁶

8. Everyone Must Be Made Whole

The Joint Commenters note that Nextel would lose approximately 10.5 MHz of spectrum through the process of alignment. They suggest that Nextel be made whole through an allocation of 10 MHz at 1910–1915/1990–1995 MHz. They acknowledge that this spectrum is designated for Unlicensed Personal Communications Systems (UPCS) and Mobile Satellite Systems (MSS); however, they also remark that no equipment has yet been certified in the lower portion of that band. The Joint Commenters assert that the public benefit of the re-designation of the spectrum to Nextel would outweigh the drawbacks for the UPCS and MSS users.

9. Funding

The Joint Commenters agree that public safety should not be required to fund any relocation mandated by the Commission. They note that the funding for this relocation would be covered by Nextel’s escrow of \$500 million plus any additional outside funding that would be provided. No public safety agency would move unless all costs were paid by an outside party, and if the system under consideration was a NPSPAC system, the conversion would be guaranteed for all related public safety systems in that region. Basically, no retuning would occur in a region if no funding were available.

A public safety agency must meet certain qualifications for reimbursement. First, all equipment that can be retuned must be, rather than being replaced. Second, the agency must disclose the cost of retuning whether performed by Nextel, in house, or by a contractor. Third, all equipment purchases must be for equivalent equipment, and all upgrades are at the cost of the agency. Finally, if voluntary negotiations languish, then the Commission would serve as the arbitrator.¹⁷

B. The Consensus Plan Achieves the Commission’s Objectives for This Proceeding

1. Interference Elimination

The rebanding would create a separation between the cellular and non-cellular operators, which should eliminate nearly all of the current interference problems. This plan would also help eliminate interference by allowing equipment manufacturers to “design front end filters that cover a smaller range of spectrum” for public safety licensees or set the filter’s center frequency lower to be more accurate.¹⁸

¹⁶ Id.

¹⁷ Id., at p. 21.

¹⁸ See Comments of Nextel Communications, Inc at Appendix A, p. 6.

Another key in the elimination of interference would be to quickly codify *Avoiding Interference between Public Safety Wireless Communications Systems and Commercial Wireless Communications Systems at 800 MHz: A Best Practices Guide* (Best Practices Guide) solutions. In addition, the Commission should also clearly define responsibility for resolving interference to address problems during the implementation of the rebanding plan and to handle any problems that might arise after the implementation of the rebanding plan. These actions would not allow the rebanding plan to absolve anyone from quickly resolving harmful interference. By mandating the solutions contained in the Best Practices Guide, the Commission would be offering specific solutions to the interfering parties.

2. Minimum Disruption to Existing Services

The Consensus Plan would require only the NPSPAC licensees and licensees occupying the General Category spectrum designated as the new NPSPAC block to relocate. The Joint Commenters assert that the costs involved in implementing this plan would be far less than moving any group of licensees out of the band. The plan would also minimize the amount of public safety and private wireless licenses that would be required to move and would eliminate the need to move any licensees to another band, which would ensure equipment compatibility and the reduction of costs.

3. Provision of Sufficient Spectrum for Public Safety

The Joint Commenters note that the Consensus Plan provides for additional spectrum for public safety through the incorporation of the vacated Nextel spectrum and the possible voluntary clearing by the B/ILT or traditional SMR licenses.

4. Other Benefits of the Consensus Plan

One benefit of the Consensus Plan would be the ability to complete the transition within 3 years of the publication of the Report & Order being published in the *Federal Register* according to the aggressive schedule. The Joint Commenters also remark that the plan would address the near-term needs of all the affected parties.

IV. ADDITIONAL PUBLIC SAFETY SPECTRUM NEEDS

The Joint Commenters note that the Consensus Plan would both eliminate interference and address public safety's need for more spectrum. They also urge legislation to allocate additional spectrum in the upper 700 MHz band to public safety. In addition, further legislation could help expedite access to the 700 MHz public safety band by setting a date-certain for the completion of the digital television transition.

V. CONCLUSION

The Joint Commenters reiterate the completeness of the solution to CMRS interference set forth in the Consensus Plan and urge the adoption of it by the Commission to remedy the harmful interference that hinders safety of life operations.