

The American Mobile Telecommunications Association, Inc. (“AMTA” or “Association”), in accordance with Section 1.415 of the Federal Communications Commission (“FCC” or “Commission”) Rules and Regulations, respectfully submits its Comments in the above-entitled proceeding.¹ The instant Notice requests comments on how to improve the spectrum environment for public safety operations in the 800 MHz band in light of increased reported interference to such systems from Commercial Mobile Radio Service (“CMRS”) facilities deploying cellularized system architecture. It seeks comments on the likely impact of several 800 MHz rebanding proposals on resolving the interference problem, as well as on related economic and logistical matters.

In AMTA’s opinion, the core issue in this proceeding is technical: what measures will be effective in eliminating, or at least substantially alleviating, CMRS interference to 800 MHz public safety systems. Once that decision is made, the Commission also must determine how such measures will be implemented, including any reimbursement mechanism, but the first consideration must be whether the “solution” will resolve the problem.

The Association has spent substantial time both internally and in consultation with other interested organizations and entities considering that issue. As detailed below, AMTA has concluded that the technical record is as yet inadequate to support adoption of any course of action, including any of those proposed in the Notice. The Association urges the Commission to first focus its attention and its considerable technical expertise on identifying more precisely the interference causes and assessing the likely palliative effect of the various proposed solutions. Once those matters have been defined, interested parties will be in a position to offer reasoned analyses for supporting a particular approach to the problem.

I. INTRODUCTION

¹*Notice of Proposed Rule Making*, WT Docket No. 02-55, FCC 02-81 (rel. March 15, 2002) (“NPR” or “Notice”).

1. AMTA is a nationwide, non-profit trade association dedicated to the interests of the specialized wireless communications industry. The Association's members include trunked and conventional 800 MHz and 900 MHz Specialized Mobile Radio ("SMR") operators, licensees of enhanced SMR systems, and commercial licensees in the 220 MHz and 450-512 MHz bands. AMTA's Board of Directors includes representatives of the three largest 800 MHz networks in the nation, those operated by Nextel Communications, Inc. ("Nextel"), Southern LINC ("Southern") and Motient Communications ("Motient"), as well as a number of other companies that operate commercial 800 MHz systems.² The Commission's decision on the issues in the NPR will have a profound impact on these entities. Thus, the outcome of this proceeding is of the highest significance to the Association.

II. BACKGROUND

²Many of AMTA's members already have been subject to the mandatory retuning process set out in FCC Rule Section 90.699. Thus, they are familiar with the direct and indirect costs associated with even retuning their systems and their customers' subscriber units to different 800 MHz channels.

2. The 800 MHz band supports a broad range of private land mobile users operating a variety of voice and/or data, single channel conventional, multi-channel trunked or cellular-like systems³. It includes public safety, business, industrial, land transportation, as well as commercial licensees. In many instances, these various types of users and system architectures are interleaved on immediately adjacent channels. Thus, a cellularized commercial system may have a single channel, high-site, high-power public safety system on one side and a multi-channel trunked SMR system on the other, each separated by only 25 kHz. Moreover, the 800 MHz band designated for private land mobile use is immediately below the spectrum assigned for cellular operations with no guardband between the allocations.

3. Historically, the 800 MHz band has been able to accommodate this disparate combination of users and usage and has done so successfully for some twenty years. However, the Notice indicates that there has been an increasing number of reports of interference to public safety systems from CMRS systems in recent years, primarily when public safety units operate in proximity to a CMRS transmitter.⁴ As the scope of the problem increased, the Commission convened a working group of experts from the public safety, manufacturing and operator communities to attempt to identify and remedy the interference, an effort which resulted in creation of a Best Practices Guide as a blueprint for means of reducing interference.⁵

³Cellular-like or “cellularized” systems are defined in the Notice as those employing multiple low power base stations, automated handoff and frequency re-use, and, further, as those consisting of a large number of base stations, each with a relatively low antenna that limits coverage to a small area around the base station. NPR at ¶¶ 11 and 12.

⁴NPR at ¶ 14.

⁵*Avoiding Interference Between Public Safety Wireless Communications Systems and Commercial Wireless Communications Systems at 800 MHz - A Best Practices Guide* (“Best Practices Guide”), December, 2000.

4. Individual licensees and the working group continue to address public safety/CMRS interference problems on an *ad hoc* basis as they arise and have had substantial success in resolving them on a case-by-case basis. Nonetheless, the NPR reports:

The ongoing implementation of an effective Homeland Security program is placing increased demands on public safety agencies' communications capability. To accommodate the demand for enhanced public safety communications capability, many jurisdictions are planning or already have implemented wide-area, often state-wide, 800 MHz band public safety systems, most making use of the NPSPAC channels.⁶

The NPR advises:

We therefore expect that public safety systems and CMRS systems will grow in concert, potentially exacerbating the current interference problem. Absent some action to remedy the problem of CMRS interference to public safety systems in terms of the root causes described in paragraph 14 *supra*, we are concerned that the interference will not only continue but may increase in scope and frequency.⁷

It concludes as follows:

These factors – the continued growth of 800 MHz public safety systems and the proliferation of CMRS cell sites – when taken together, indicate that the interference problems described above will become more severe in the future unless we take significant corrective action.⁸

5. This concern is the foundation of the instant proceeding. It has prompted the Commission to investigate potential solutions to the interference problem, primarily those that would require a fundamental restructuring of the 800 MHz band.

III. THE PUBLIC SAFETY INTERFERENCE PROBLEM IS REAL AND DEMANDS AN EFFECTIVE SOLUTION

⁶NPR at ¶ 18. The FCC allocated 6 MHz of spectrum (821-824/866-869 MHz) in 1986 for public safety use, a band immediately below the already-authorized cellular allocation. That spectrum has been assigned to individual public safety entities in accordance with the National Public Safety Planning Advisory Committee ("NPSPAC") criteria. NPR at ¶ 8.

⁷*Id.*

⁸*Id.*

6. There is no serious question that there is a genuine, growing problem of interference to 800 MHz public safety systems from cellularized CMRS systems. Those problems have been documented, present a serious threat to the safety of this nation's people and property, and demand prompt curative action.

7. Because AMTA shares the Commission's conviction that public safety systems engaged in providing critical services such as police and fire protection must enjoy essentially interference-free radio communications, it is committed to working with the FCC and the public safety community to develop a plan that will ensure that objective is met. This is not a case where band-aids are an adequate substitute if sutures are required. AMTA also is sensitive to the budgetary concerns of the public safety community. While all organizations must deal with economic constraints on their ability to purchase and implement new communications systems, public safety entities often face unique challenges when seeking public funds for such purposes. It is essential that whatever course the FCC selects to resolve these interference problems, it must have confidence that the corrective action will be effective both immediately and in the longer-term, that it is technically and logistically achievable, and that it is as cost-effective as possible.

8. The Notice describes several plans for restructuring the 800 MHz band to address the interference issue and the Association has given each careful consideration.⁹ Although the plans vary significantly in terms of their impact on the band, and, in particular, on non-public safety incumbents in the band, all would require the retuning of a substantial number of incumbent systems to different channels in an effort to provide greater separation between public safety and cellularized CMRS systems, both those operating in the 800 MHz band and those operating on cellular channels.

9. It is possible that the Commission will determine that some 800 MHz rebanding plan is the appropriate solution for this problem. However, AMTA cautions that the record today is far

⁹*Id.* at ¶¶ 21 - 26.

from conclusive in that regard. Most critically, the record is devoid of data to support a determination that separating public safety from interfering CMRS systems by some specific, but if still within this same band necessarily limited, amount of spectrum will, in fact, provide genuine interference relief, relief sufficient to warrant the extraordinary cost and disruption to public safety users and others required to implement such a plan

10. The increased complexity and ubiquity of wireless systems noted in the NPR is reflected in the complexity of their interference problems. As stated in the Notice:

The *Best Practices Guide* describes the causes of CMRS interference to public safety systems as falling into four major categories: intermodulation, receiver overload, transmitter sideband noise, and effects due to the transition from analog to digital modulation. Several factors present in today's 800 MHz band communications environment increase the potential for one or more of these types of CMRS-public safety interference to occur. First...the typical infrastructures of public safety and CMRS systems result in public safety mobile or portable units attempting to receive weak signals from far away while they are located near cell site where CMRS signals are strongest. Second, CMRS and public safety systems use frequencies in close proximity to one another....Third, public safety receivers are often not sufficiently selective to reject undesired signals that may be present under these conditions. These factors combine to create conditions in which interference occurs.¹⁰

11. AMTA has had extensive discussions within its own membership and has actively sought input from other technical experts in an effort to understand the significance of each of these factors in causing the interference being experienced by public safety systems. More importantly, it has attempted to reach some technical consensus regarding the likely impact of various 800 MHz rebanding proposals in respect to alleviating that problem, both those outlined in the Notice and others that have been developed in response to the NPR and are expected to be submitted for consideration on the record.

¹⁰NPR at ¶ 15. This analysis fails to include one additional significant factor. Many public safety mobile and portable units are designed to "hear" both the General Category and interleaved public safety channels in the lower portion of the 800 MHz band and the NPSPAC channels that lie entirely between the "upper 200" 800 MHz channels on which Nextel operates its iDEN network and the cellular allocation.

12. Based on its investigation to date, the Association has concluded that further technical evaluation is essential before the FCC can determine whether 800 MHz rebanding, by itself, will provide substantive interference relief to public safety systems under any scenario. AMTA's investigation has revealed significant differences of opinion on this subject among respected engineering sources. Until these differences are resolved, and the Commission's own technical experts are satisfied that they understand what rebanding will and will not accomplish, it is premature to recommend any rebanding or other approach. Public safety entities, in particular, cannot be expected to endorse a plan without a clear understanding of its likely ameliorative impact and without confidence that the solution is a long-term one.

13. This further investigation should not adversely impact public safety communications. It is clear that any of the interference-resolution approaches under consideration will require some considerable time for implementation, even assuming other parties, like AMTA, are committed to proceeding as expeditiously as possible. This undertaking unquestionably is a multi-year, not weeks or months, task. In the interim, the Association assumes that interfering parties will continue to work with affected public safety entities on a case-by-case basis in accordance with the procedures and process set out in the *Best Practices Guide*. Because there already is a proven mechanism in place to address individual interference cases, the industry and the Commission have the opportunity, and the responsibility, not to rush to judgment, but instead to develop a plan that considers public safety communications requirements, both in respect to the quantity of spectrum needed and the quality that can be achieved in various bands.

14. AMTA does not wish to delay the resolution of this proceeding. To the contrary, the Association is gravely concerned that uncertainty about the future composition of this band that has been raised by the adoption of the NPR tends to make investment and expansion highly problematic. As the representative of industries that already have undergone multi-year Commission spectrum

freezes, AMTA is highly sensitive to the importance of bringing these issues to closure promptly and is prepared to commit its full resources toward doing so.

15. Nonetheless, the Association also believes the FCC and the 800 MHz user community must give thoughtful, detailed consideration to the logistics of implementing a 800 MHz rebanding plan. While any multi-system migration presents difficulties, the problem is significantly compounded when the migration, for the most part, is entirely within fully encumbered spectrum and involves a multiplicity of entities and system types that all must cooperate and coordinate if chaos is not to ensue.

16. Finally, but far from last, the Commission and the industry must develop a specific, viable plan for funding whatever changes are needed to alleviate the interference problem. Even the least expensive system retuning proposal is estimated to cost many hundreds of million, perhaps billions, of dollars. The solutions that involve moving either public safety or other incumbents out of the 800 MHz band could cause those costs to double.¹¹ To the extent it is in the overall public interest to correct this problem, which it surely is, it may be appropriate to secure Congressional support for a funding mechanism that looks to the general public to support this vital effort. The responsibility cannot rest entirely on those who operate in the 800 MHz band, and most certainly not on those who do so without causing interference to public safety communications.

IV. CONCLUSION

17. It is essential that the Commission proceed promptly to remedy the CMRS/public safety interference problem. Before doing so, however, the FCC must assure itself, the public safety community, and other licensees that will be affected by the process, that the expected interference

¹¹See, e.g., December 20, 2001 letter from Aeronautical Radio, Inc. et al to Michael K. Powell, Chairman; January 15, 2002 letter from Motient to Michael K. Powell, Chairman. Motorola, Inc. has estimated the cost of implementing the White Paper proposal as more than \$2,700,000,000 and the NAM proposal as more than \$1,600,000,000.

improvements are sufficient to justify the direct and indirect costs associated with whatever in-band or out-of-band retuning approach is selected. AMTA looks forward to working with the Commission and other affected parties in developing a comprehensive, logistically and economically viable solution to this critical problem.

CERTIFICATE OF SERVICE

I, Linda J. Evans, a secretary in the law office of Lukas, Nace, Gutierrez & Sachs, hereby certify that I have, on this May 6, 2002 caused to be mailed, first-class, postage prepaid, a copy of the foregoing Comments to the following:

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