Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Implementation of Sections 309(j) and 337	)	WT Docket No. 99-87
Of the Communications Act of 1934 as Amended	)	
	)	
Promotion of Spectrum Efficient Technologies on	)	RM-9332
Certain Part 90 Frequencies	)	

REPLY COMMENTS OF MOTOROLA

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SUMMARY

Motorola supports the efforts the FCC has made to improve efficiency in the VHF and UHF bands. These bands continue to be highly congested and the Commission's establishment of a date-certain for mandatory migration to narrowband technology will ensure the better utilization of this spectrum in the future. The Commission should not, however, attempt to micromanage the transition to narrowband technology by establishing interim benchmarks that will prohibit users from enlarging or repairing their systems throughout the migration. Additionally, the Commission should allow for dual-mode technologies until the established date-certain so users will be able to adapt to changing business needs and interoperate with other systems.

In addition, Motorola requests that the Commission reconsider its decisions to eliminate the paging exemption to the narrowbanding requirements and the option to submit designs that offer two voice paths over a 12.5 kHz channel. The Commission failed to address either of these deletions in any detail despite their great impact on both the paging and manufacturing industries. If maintained, both industries will suffer great losses in investment and development. These investments were made in good faith reliance on the Commission's prior decisions. To change such policies now at the 11th hour would result in undue hardship to both the paging and manufacturing industries.

Finally, Motorola requests that the Commission deny M/A-COM's proposal that the VHF and UHF channel centers be shifted. Since the Commission did not consider this possibility in the *Further Notice* and has previously rejected similar proposals, such a change at this stage would be inappropriate.

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REPLY COMMENTS OF MOTOROLA

Motorola, Inc. ("Motorola") hereby submits these reply comments in response to the Commission's *Second Report and Order and Second Further Notice* in the above-captioned proceeding.[1] Motorola remains strongly supportive of the Commission's goal to improve spectrum efficiency in the 150-174 MHz and 421-512 MHz bands. However, in light of the numerous petitions for reconsideration filed by both public and private organizations in this proceeding, Motorola continues to be concerned about the effect several aspects of the *Second Report and Order* will have on the industry and the public.

I. INTRODUCTION

It has long been the policy of the Commission to encourage the deployment and use of efficient technologies in the historically congested VHF and UHF bands. Previously, the FCC did so by only authorizing increasingly efficient equipment designs.[2] In the *Second Report and*

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[1] In the Matter of 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 Rule Making*, WT Docket No. 99-87, 68 Fed. Reg. 42296 (2003) [*"Second Report and Order"* or *"Second Further Notice*"].

[2] Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency

Order, the Commission concluded that this approach was no longer sufficient and adopted a date-certain for mandatory migration to narrowband technology.[3] Additionally, the Commission established several interim benchmarks that would hopefully increase efficiency in the industry during the transition. These benchmarks mandated that:

- Six months after Federal Register publication of the Second Report and Order, no applications for new or expanded operations using 25 kHz channels in the 150-174 or 421-512 MHz bands would be permitted;
- Certification of any equipment capable of operating at one voice path per 25 kHz of spectrum would no longer be permitted after January 1, 2005; and
- Equipment capable of operating at one voice path per 25 kHz of spectrum could not be manufactured or imported after January 1, 2008.

Although these benchmarks were intended to "serve as catalysts toward employment of 12.5 kHz technology and encourage licensees to begin their conversion to narrowband technology prior to the mandatory migration dates,"[4] Motorola maintains that such disallowance of flexibility during the transition will lead to interoperability and service problems unforeseen by the Commission.

Assignment Policies of the Private Land Mobile Radio Services, *Report and Order and Further Notice of Proposed Rule Making*, PR Docket No. 92-235, 10 FCC Rcd 10076, ¶ 36 (1995)("*Refarming R&O and FNPRM*").

[3] For the purposes of these comments, we define narrowband technology as the "utilization of one voice path per 12.5 kHz of spectrum." *Second Report and Order* at ¶ 6, fn 10. Furthermore, in these comments, the term "12.5 kHz technology" is intended as the equivalent of "narrowband technology" and "technology operating at one voice path per 12.5 kHz channel width."

[4] *Second Report and Order* at ¶ 21.

II. THE VAST MAJORITY OF COMMENTERS SUPPORT THE PROPOSALS MADE IN MOTOROLA'S PETITION FOR RECONSIDERATION.

In its *Petition for Reconsideration*, Motorola proposed that the interim benchmarks established in the *Second Report and Order* be eliminated and that the exemption from the narrowbanding requirements for one-way paging operations be reinstated. Motorola also asked that the Commission clarify that it did not intend to eliminate the flexibility to meet any future 6.25 kHz efficiency requirements with systems designed for two voice paths in a 12.5 kHz channel. Upon review of the multiple petitions for reconsideration filed in this proceeding, Motorola would like to reaffirm its belief that these adjustments are necessary for the public interest to be served.

A. The Commission Should Allow for Greater Flexibility During the Transition Period to Narrowband Technology by Eliminating the Interim Benchmarks Established in the *Second Report and Order.*

In addition to adopting a final deadline for migration to 12.5 kHz technology in its *Second Report and Order*, the Commission adopted several interim benchmarks in an attempt to encourage a faster migration to narrowband technology. In its *Petition for Reconsideration*, Motorola proposed that greater flexibility be allowed during the transition to narrowband technology by allowing licensees to determine the best way to meet the 2013 deadline.[5] Furthermore, Motorola suggested that the Commission's decision to limit the availability of dual-mode technologies during the transition would not encourage the migration but instead would harm interoperability and the communications capabilities of users.[6] These benchmarks will not only prohibit organizations from obtaining replacement parts during the transition period but will also prevent licensees from adjusting their business models to conform to user needs.

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5 *Petition for Reconsideration and Clarification of Motorola, Inc.*, WT Docket No. 99-87 (August 18, 2003) at 8.

6 *Id*. at 7.

Comments strongly support Motorola's proposal to eliminate these interim benchmarks.[7] While fully supporting the overall transition to 12.5 kHz efficiency, and even recommending that the 2018 end date for the transition be revised to a more aggressive end-date of 2013, the Association of Public-Safety Communications Officials-International, Inc. ("APCO") stated that "[i]f not changed, the 'near-term' dates and requirements will prevent public safety licensees from adding critical capacity and coverage for existing systems, locking them into current channels and equipment supplies, or forcing them to expend scarce resources to replace prematurely their entire radio systems."[8]

Similarly, the National Telecommunications and Information Administration ("NTIA") states that if the benchmarks are retained, especially the prohibition of equipment compatible with legacy designs, many systems will not be able to repair their systems or expand their coverage area to serve a larger proportion of the public.[9] The *NTIA Petition* further warns that the Commission will be limiting "the ability to interoperate with legacy systems during the transition period. Today's standards-based architecture requires this backward compatibility for

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7 *See e.g. Requests for Clarification and Reconsideration and Comments on the Second Further Notice of Proposed Rulemaking of the National Telecommunications and Information Administration*, WT Docket No. 99-87 (August 13, 2003)("*NTIA Petition*"); *Petition for Reconsideration of The American Mobile Telecommunications Association; The Industrial Telecommunications Association; and PCIA-The Wireless Infrastructure Association*, WT Docket No. 99-87 (August 18, 2003)("*AMTA Petition*"); *Petition for Reconsideration*, The American Petroleum Institute and the United Telecom Council, WT Docket No. 99-87 (August 18, 2003); *Petition for Reconsideration*, The Association of American Railroads, WT Docket No. 99-87 (August 18, 2003); *Petition for Reconsideration*, The Association of Public-Safety Communications Officials-International, Inc., the International Association of Fire Chiefs, Inc. and the International Municipal Signal Association, the International Association of Chiefs of Police, Major Cities Chiefs Association, National Sheriffs' Association, Major County Sheriffs' Association, and the National Public Safety Telecommunications Council, WT Docket No. 99-87 (August 18, 2003) ("*APCO Petition*"); *Petition for Reconsideration*, The Private Wireless Mining Coalition, WT Docket No. 99-87 (August 18, 2003).

8 *APCO Petition* at 3.

9 *NTIA Petition* at 4.

a practical, graceful migration to new technologies."[10] To disallow dual modality would be to disallow communications between federal, state, and local systems during the transition period.[11] Such a result is clearly not in the public interest and could not have been intended by the Commission. It is therefore important that the Commission act now to ensure that there will be a smooth transition to narrowband technology.

The American Mobile Telecommunications Association, the Industrial Telecommunications Association, and PCIA-The Wireless Infrastructure Association also recommend that the Commission adopt a more marketplace-driven approach.[12] They state that "[a]s long as the Commission establishes clear rules governing the licensing and use of equipment, it should not be necessary also to restrict the certification, manufacture or importation of equipment."[13] Additionally, the dynamic nature of the PLMR industry requires that a number of licensees to frequently modify their licenses to conform to changing business needs. The Commission should th

[10] 18.25 5.12 -0.0768 f -0.0697 Tc 102578 Tw 102578 -179er 4.25 5.I3 0 T

B. The Commission Should Not Narrowband Channels Reserved for One-Way Paging Operations.

Prior to this *Second Report and Order*, one-way paging operations had been exempted from all narrowbanding requirements. Without any direct discussion, however, the *Second Report and Order* eliminated this paging exemption. Under § 553 of the Administrative Procedure Act, the Commission is required to state either the terms or substance of the proposed rule change or a description of the subjects and issues involved in its *Notice of Proposed Rulemaking*.[15] Such a description was not given in the *NPRM* and therefore notice was not sufficient to enable such a rule change. Furthermore, a similar exemption applicable to public safety paging operations was not modified in any manner nor was any rationale given for varying the treatment of public safety and non-public safety paging operations. These discrepancies lead Motorola to believe that the deletion was inadvertent and should hence be rectified. If the deletion was intentional, however, the change is not legally sustainable due to the lack of compliance with the procedures established by the Administrative Procedures Act.

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[15] 5 U.S.C. § 553(b)(3).

All other commenters associated with paging operations took this same approach to the Commission's deletion of the exemption. The Private Paging Coalition, for example, believed that "this action was unintentional…[but if] intended, the Commission was required to make the public aware of this proposed rule change, and proffer a sound basis for the decision."[16] The Coalition further argues that the rule change will have a substantial impact on paging licensees due to the continuing decline in the profitability of the paging industry.[17] It would require an industry that is already having financial difficulty to either replace entire systems at once to ensure continued compatibility or risk losing customers and coverage area.[18] Such an amendment would place undue hardship on paging carriers who did not have an adequate opportunity to meaningfully participate in the proceeding and is therefore not in the public interest.[19] In a similar fashion, the American Association of Paging Carriers, Allied National Paging Association, Arch Wireless Operating Company, LLC, and Metrocall Holdings, Inc. state that the mandatory migration of paging-only frequencies to 12.5 kHz operation would cause extreme economic hardship on the industry while providing no technical or operational benefits since there is no evidence that spectrum congestion in the paging bands produces harmful

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16 *Petition for Reconsideration and/or Clarification*, Blooston, Mordkofsky, Dickens, Duffy & Prendergast on behalf of its paging clients Mobilephone of Humboldt, Inc., L & L Services, Inc., Mobile Phone of Texas, Inc., Lubbock Radio Paging Service, Inc., Omnicom Paging Plus, LLC, Oregon Telephone Corp., Professional Answering Service, Teletouch Communications, Inc., RCC Inc., Telebeep, Inc., Satellink Paging, LLC, Pensaco Valley Telephone Cooperative, and Clear Lake Telephone Company, WT Docket No. 99-87 (August 18, 2003) at 4.

17 *Id*. at 6.

18 *Id.* at 9.

19 *Id.* at 9.

interference.[20] The Commission should therefore reinstate the one-way paging exemption from the narrowbanding requirements.

C. No Benefit Will Arise from Disallowing Alternative Efficient Designs.

In the *Second Report and Order*, the Commission, either intentionally or inadvertently, eliminated the option of submitting equivalent efficiency designs after January 1, 2005.[21] Prior to the *Second Report and Order*, the Commission had never vocalized an intention to limit operation to 6.25 kHz channel widths as a means of meeting any future 6.25 kHz efficiency requirements. On the contrary, the Commission had adopted a flexible approach that would allow for the aggregation of equivalent channels or timeslots so that users would be able to "employ the most spectrally-efficient technology available, while causing the least disruption to their own and other existing operations."[22]

Without such flexibility, many evolving technologies will be prohibited despite the fact that they may be able to meet both user's operational needs and the Commission's efficiency targets. APCO states that "TDMA and other multi-bandwidth mode equipment can provide important efficiencies for certain types of…radio systems. Mobile data systems also provide critical functionality to modern…communications operations, but generally require wideband channels for current technology."[23] Similarly, IPMobileNet states that it is currently operating a

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20 *Petition for Reconsideration of Second Report and Order*, American Association of Paging Carriers, Allied National Paging Association, Arch Wireless Operating Company, LLC, and Metrocall Holdings, Inc., WT Docket No. 99-87 (August 18, 2003) at 6-8.

21 *See Second Report and Order*, Appendix B, amended Sections 90.203 and 90.209(b)(6).

22 *Refarming R&O and FNPRM* ¶ 7.

23 *APCO Petition* at 9.

system at 19.2 kbps in a 25 kHz voice channel.[24] For those applications where data can meet a user's operational needs, such operations can be viewed as more than 200 times as spectrally efficient as a 12.5 kHz voice channel.[25]

The PLMR industry heavily relied on the Commission's statement that it would allow alternative efficient technologies. Large investments are being made by multiple manufacturers to standardize a two-slot/12.5 kHz technology as the most appropriate approach for Project 25, Phase II. This standard, once completed and tested, offers the promise of providing the equivalent of one voice path per 6.25 kHz in a 12.5 kHz channel bandwidth. In order to prevent this waste of investment and efficiency, the Commission should reconsider its decision to require equipment to operate in discrete channels to meet per any future 6.25 kHz efficiency requirements.[26]

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[24] *Request for Clarification, or in the alternative, Request for Reconsideration*, IPMobileNet, Inc., WT Docket No. 99-87 (August 18, 2003) at 7.

[25] *Id*. at 7-8. IPMobileNet stated that "the average airtime to transmit a dispatch call is 45 seconds…The same dispatch call when transmitted in a data system at 19.2 kbps uses only approximately 200 bytes of airtime…[or] 80 milliseconds. Obviously, a far greater number of units can utilize a single 25 kHz data channel operating with these data speeds than could be accommodated on two 12.5 kHz voice channels." *Id*. at 8.

[26] Additionally, Motorola would like to reiterate its request that the Commission postpone the fast approaching January 1, 2005 deadline after which any product design in the bands below 512 MHz submitted for certification would be required to include a 6.25 kHz mode of operation. *See, e.g., Comments of Motorola, Inc.*, WT Docket No. 99-87, submitted September 15, 2003. The standards setting process for 6.25 kHz technology has simply not progressed quickly enough for this to be a reasonable deadline. Recent comments by users also confirm that any consideration of setting a licensing or operational transition to 6.25 kHz or equivalent technology is premature. Therefore, the Commission should, instead, postpone the January 2005 certification deadline until a time when the Commission may consider the entire timeline for migration to technology capable of one voice path per 6.25 kHz channel width.

III. THE COMMISSION SHOULD NOT SHIFT THE VHF OR UHF CHANNEL CENTERS AS PROPOSED BY M/A-COM.

In its *Petition for Reconsideration*, M/A-COM proposes to shift channel centers by 3.125 kHz in the UHF band and a complete restructuring of the VHF band.[27] It argues that the shift in the UHF band will not only simplify the transition to 6.25 kHz channels but will also minimize the overlap problems between 12.5 kHz channels and 6.25 kHz channels.[28] M/A-COM further argues that without a full restructuring of the VHF band that will result in a structure similar to the current UHF band structure, the transition to 6.25 kHz technologies will provide "significantly less than full benefits."[29] If such changes are made, M/A-COM states that the resulting band structures will be similar to the band structure established for the new 700 MHz public safety spectrum.[30]

This proceeding is not the appropriate place to address M/A-COM's proposal. A Petition for Reconsideration may only deal with issues specifically addressed in the original order. Furthermore, it may not rely on facts and arguments not previously presented to the Commission for review unless they either relate to circumstances that have changed since the last opportunity to present them to the Commission or were unknown to the petitioner until after the last opportunity to present them to the Commission had passed.[31] In the *Second Report and Order*, the Commission did not address the possibility of a channel shift in the VHF or the UHF bands

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27 *Petition for Reconsideration of the Second Report and Order filed by M/A-COM, Inc.*, WT Docket No. 99-87 (August 18, 2003) at 14-15.

28 *Id.* at 15.

29 *Id.* at 16.

30 *Id.* at 15.

31 47 C.F.R. § 1.429(b).

nor was it mentioned in the underlying *Notice of Proposed Rulemaking*. Such a consideration, therefore, at this stage is inappropriate.

Furthermore, the Commission has previously rejected several proposals similar to M/A-COM's. In the original *Notice of Proposed Rulemaking* initiating PR Docket No. 92-235 in 1992, the Commission proposed a channel shift in the VHF and UHF bands.[32] This proposal was rejected, however, in 1995 when it was found that most existing licensees believed it critical that they remain on their existing channel and that retaining the existing channel centers would minimize confusion throughout the migration.[33] Later, in December 1996, the Commission denied several petitions for reconsideration seeking a shift in the VHF and UHF channelizations.[34] The primary rationale for denying the petitions was a desire among current users to have flexibility during the transition to narrowband technology.[35] It was found that the ability to stay on a currently assigned center frequency was critical to a smooth transition.[36]

M/A-COM has produced no evidence that these findings should be altered. The industry has not suddenly become less dependant on channel center continuity during the transition. If anything, the PLMR industry has become more reliant on the Commission's assurances that licensees would be permitted to retain their channel centers. It would therefore be inappropriate for the Commission to consider M/A-COM's proposal, which would disrupt the entire VHF and UHF bands.

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32 In the Matter of Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Rules Governing Them, *Notice of Proposed Rulemaking*, NB Docket No. 92-235, 7 FCC Rcd 8105 (1992).

33 *Refarming R&O and FNPRM* at ¶ 26.

34 *Refarming MO&O*.

35 *Id*. at ¶ 8.

36 *Id.* at ¶ 8.

IV. CONCLUSION

Motorola applauds the Commission for the steps it is taking to encourage the use of spectrally efficient technologies in the VHF and UHF bands. These bands are heavily used and it is essential that a solution be developed that will ensure a smooth transition to more efficient 12.5 kHz efficiency. Users support the migration to narrowband 12.5 kHz technology, so there is no need for the Commission to micromanage the transition. The interim benchmarks, as well as several of the other changes, established by the *Second Report and Order* will negatively impact the ability to meet operational and interoperability needs, consequences apparently unanticipated by the Commission in making its original decision. It is therefore crucial that the Commission reexamine and modify the rules addressing interim steps in the transition to ensure that the PLMR industry can met its operational and interoperability needs while it aggressively migrates to more efficient 12.5 kHz narrowband technology.

Respectfully submitted,

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