

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
Spectrum Policy Task Force Seeks Public Comment)	ET Docket No. 02-135
On Issues Related to Commission's Spectrum)	DA 02-1311
Policies)	

**REPLY COMMENTS
OF
THE LAND MOBILE COMMUNICATIONS COUNCIL**

The Land Mobile Communications Council ("LMCC"), pursuant to Section 1.415 of the Commission's Rules, 47 C.F.R. § 1.415, hereby respectfully submits its Reply Comments in the above-captioned proceeding.

I. INTRODUCTION

LMCC is a non-profit association of organizations representing virtually all users of land mobile radio systems, providers of land mobile services, and manufacturers of land mobile radio equipment. LMCC acts with the consensus, and on behalf, of the vast majority of public safety, business, industrial, private, commercial and land transportation radio users, as well as a diversity of land mobile service providers and equipment manufacturers. Membership includes the following organizations:

- Aeronautical Radio, Inc. (ARINC)
- American Association of State Highway and Transportation Officials (AASHTO)
- American Automobile Association (AAA)
- American Mobile Telecommunications Association, Inc. (AMTA)
- American Petroleum Institute (API)
- Association of American Railroads (AAR)
- Association of Public Safety Communications Officials-International, Inc. (APCO)

- Central Station Alarm Association (CSAA)
- Forest Industries Telecommunications (FIT)
- Forestry-Conservation Communications Association (FCCA)
- Industrial Telecommunications Association, Inc. (ITA)
- Intelligent Transportation Society of America, Inc. (ITSA)
- International Association of Fire Chiefs (IAFC)
- International Association of Fish and Wildlife Agencies (IAFWA)
- International Municipal Signal Association (IMSA)
- Manufacturers Radio Frequency Advisory Committee (MRFAC)
- National Association of State Foresters (NASF)
- PCIA – The Wireless Infrastructure Association (PCIA)
- Telecommunications Industry Association (TIA)
- United Telecom Council (UTC)

The Commission’s creation of the Spectrum Policy Task Force (“SPTF”) to undertake a comprehensive review of the nation’s spectrum policies has prompted thoughtful analysis by a broad range of interested parties, including member organizations of LMCC and some of those organizations’ own individual members.¹ Like those parties, LMCC applauds the FCC’s determination to investigate these matters *de novo*. There have been significant technological advances and marketplace developments in recent years that should be reflected in FCC spectrum policy deliberations. To the extent this initiative produces an industry-government partnership committed to an ongoing process of spectrum management analysis, the interests of communications users and the public will be well-served.

II. THE SPTF CORRECTLY RECOGNIZES MULTIPLE, VIABLE SPECTRUM USAGE MODELS.

LMCC commends the Commission for recognizing that there is no single “one size fits all” approach to spectrum management. Telecommunications users in this nation enjoy access to a broad variety of system types and service options developed in response to the requirements of a diverse population. All three spectrum usage models identified by the SPTF play an important

¹ See, e.g., Comments of Association of Public-Safety Communications Officials-International, Inc. (“APCO”), Central Station Alarm Association (“CSAA”), Industrial Telecommunications Association, Inc. (“ITA”), PCIA, The Wireless Infrastructure Association (“PCIA”), Telecommunications Industry Association (“TIA”), United Telecom

role in satisfying the communications needs of some user segment. Each represents a different balancing of considerations such as spectrum efficiency, interference protection, ease of access to spectrum, and equipment complexity and cost.

For the most part, the entities represented in LMCC's membership operate systems on spectrum allocated under the "command-and-control" model.² The public safety and other business and industrial entities that constitute the private land mobile radio services ("PLMRS") typically have highly individualized communications requirements. They use spectrum to improve the operating efficiencies of their primary businesses or activities by deploying systems to perform particular functions in identified geographic areas.³ The frequency- and site-specific nature of these operations is well-suited to the "command-and-control" spectrum management model and it must be retained for these purposes.

This is not to say that the "exclusive" or even perhaps the "commons" model might not, under some circumstances, satisfy a specific PLMRS licensee's particular telecommunications requirement. The industries represented by the LMCC are in the forefront of technological innovation. As their communications needs expand concomitantly to include applications that can be accommodated on exclusive or even unlicensed spectrum, they will avail themselves of those options.⁴ However, while those models may supplement, they will not work as a substitute

Council ("UTC"), Boeing Company ("Boeing"), Lockheed Martin Corporation ("Lockheed Martin"), and Motorola, Inc. ("Motorola").

² See, e.g., Comments of ITA and UTC.

³ LMCC recently submitted a letter comment in this proceeding noting that the SPTF and recent Commission pronouncements could be construed to indicate that all systems are either public safety or commercial operations. In fact, a significant number of FCC-licensed facilities, more than one million stations and thirteen million transmitters, are operated by PLMRS eligibles. The PLMRS includes systems operated by Fortune 500 companies and by myriad small businesses which have determined that their communications requirements are best satisfied by means other than third-party, consumer-oriented services.

⁴ PLMRS users sometimes require the exclusive use of spectrum to meet specific operational demands, in some instances requirements imposed by law on those performing activities that involve the safety of the public. Unlike

for sufficient dedicated PLMRS spectrum. Thus, like the Commission, LMCC does not favor one model over another, but views each as part of the complex mosaic that is both the product of and the engine for our nation's highly innovative telecommunications industry.

III. MORE INTENSIVE SPECTRUM UTILIZATION WILL NOT SERVE THE PUBLIC INTEREST IF IT IS ACHIEVED BY ABANDONING NECESSARY LEVELS OF INTERFERENCE PROTECTION.

The rights of users to operate without harmful interference must be at the core of all spectrum policy decision-making. Neither governmental/business organizations nor consumers will invest in telecommunications equipment without some reasonable confidence that the devices will be useable for the intended purpose and not subject to unacceptable levels of interference.

Of course, the obligation to mitigate potential interference must be balanced against the need to maximize efficient use of spectrum, particularly in geographic areas and frequency bands that experience chronic spectrum shortages. For example, the highly protective methodology used to assign television channels has left significant amounts of "white space" in broadcast spectrum, spectrum that could be put to productive use by services such as the PLMRS in a number of major urban areas.⁵ That approach essentially ensured that television transmissions would be interference-free, but at the cost of leaving important spectrum resources underutilized.

LMCC members have particular expertise in balancing these two important policy objectives. As noted by several commenting parties, a significant number of their systems

the commercial entity that derives a direct economic benefit from the use of exclusive spectrum, the typical PLMRS economic model is one of cost savings through improved operating efficiency.

⁵ See SPTF: Report of the Spectrum Rights and Responsibilities Working Group at pp. 42-4; Motorola Comments at pp. 23-15.

operate on “shared” spectrum without exclusive rights to their authorized frequencies.⁶ They must cooperate and coordinate their use of channels on an ongoing basis. These bands achieve impressive levels of efficiency if defined purely on the basis of the number of operational units per channel in a given area, but without the degree of interference protection enjoyed by licensees with “exclusive” spectrum rights.

Because they have a tradition of spectrum sharing, LMCC members, like the SPTF, are intrigued by the idea of “frequency-agile” radios and other types of opportunistic devices that ultimately may permit more intensive use of spectrum without compromising the operation of licensed, or even unlicensed, systems sharing the same channels. The commercial availability of such equipment, coupled with tools such as the suggested “interference temperature” concept, if proven, could promote unprecedented spectrum availability and interference-free operation to the benefit of all communications users. As such, they warrant further investigation.

However, LMCC urges the Commission to weigh carefully the comments of those with particular expertise in such matters as it considers what role these devices might play in its spectrum management policies, both near-term and far-term. TIA, the pre-eminent trade association for telecommunications equipment manufactures and suppliers, has stated the following:

While TIA supports the SPTF addressing cutting-edge and forward-looking issues (i.e. using “white spaces” – temporal sharing), the Commission must recognize that many of the technologies cited (e.g., opportunistic devices, software defined radios that are completely agile in terms of operating frequencies, bandwidths, and modulation formats, and ultra wide band radios) are not likely to be ready for commercial availability for some time. Finally, the Task Force promotes concepts (such as the “interference temperature”) that today are unproven and undefined. Allocations based on anticipated advances in technology are

⁶ See, e.g., Comments of PCIA at p. 2, UTC at p. 4, and CSAA at p. 6 .

dangerous, and should await the demonstrable existence of such technology at reasonable costs for widespread deployment.⁷

Motorola, a leading telecommunications equipment developer and manufacturer, expressed a similar, cautionary note:

While it may be appropriate for the Commission to seek to maximize the use of the spectrum by evaluating spectrum time-sharing, Motorola urges the Commission to proceed carefully so as not to jeopardize existing services. Motorola's two White Papers in this proceeding have highlighted some of the principal technical difficulties involved with exploiting the time dimension. For example, the White Papers note that determining whether a frequency channel is unused is far more complex than simply measuring activity on that channel in any one location. Considerable work remains to be done to fully understand how best to take advantage of this dimension.⁸

It went on to state the following in respect to the "interference temperature" concept that is fundamental to much of the SPTF analysis:

Motorola stresses, however, that the concept of interference temperature proposed in the Task Force Report is fraught with difficulty. That concept envisions the ability to dynamically allow unlicensed operations within licensed spectrum bands based on the detection of communications traffic. The fundamental task of determining and controlling the influence of a transmitter's emissions upon a remotely located receiver is an enormously complex problem. In the attached Appendix, Motorola identifies some of the technical hurdles that must be overcome before the potential benefits of the interference temperature concept might be realized. While we fully support further analysis and study, this concept is far from being ready for routine deployment in the real world as a reliable spectrum management tool.⁹

In light of such warnings, LMCC urges the FCC to proceed cautiously before introducing these concepts into its spectrum management arsenal. In particular, it would be premature to adopt rules permitting unlicensed devices to share spectrum with licensed services in reliance on their ability to avoid interfering with those services. Unlicensed devices, by their nature, are not

⁷ TIA Comments at p. 3.

⁸ Motorola Comments at pp. 8-9.

⁹ *Id.* at p. 14.

susceptible to Commission oversight, except in the broadest sense that the equipment presumably would require FCC approval. Once released into the marketplace, it would be virtually impossible to recall them should interference problems arise. The operations of PLMRS users, including those providing public safety, utility, transportation and other important services to the public, cannot be compromised for the sake of an experiment involving as yet unproven technologies and techniques. LMCC agrees that further exploration of the concepts is warranted, but their deployment must be delayed until the concerns raised by TIA, Motorola and others have been resolved.

IV. SPECTRUM “HARMONIZATION” PROMOTES BOTH SPECTRUM EFFICIENCY AND INTERFERENCE PROTECTION.

Several parties specifically noted the important spectrum management benefits of grouping services with similar technical characteristics.¹⁰ While LMCC recognizes that technical flexibility may play an important role in advancing certain objectives, unlimited flexibility, like excessive regulatory rigidity, can undermine important spectrum management goals.

Spectrum users do not exist in a vacuum. Rather, they co-exist with numerous other entities operating on adjacent channels and in adjacent markets areas.¹¹ Given the highly inter-related nature of spectrum utilization, the FCC wisely has determined that the technology choices within bands must be bounded by certain technical parameters. Establishing some measure of commonality among the types of systems and technologies to be used creates the level of certainty needed for manufacturers to develop products and users to deploy them. In the absence of some reasonable degree of technical “harmonization”, telecommunications investment is

¹⁰ See, e.g., TIA Comments at pp. 2 – 4; Motorola Comments at pp. 10-11.

¹¹ Even entities that enjoy an exclusive nationwide allocation have to co-exist with licensees on adjacent spectrum bands.

deterred either because of the potential for interference or because the Commission must sacrifice more intensive utilization to provide the spectrum and/or geographic guard bands needed to avoid the potential for destructive interference.¹² The better approach to spectrum management balances optimal licensee operating flexibility with reasonable technical ground rules that protect the interests of all spectrum users.

V. PRO-ACTIVE SPECTRUM MANAGEMENT DOES NOT OBVIATE THE NEED FOR APPROPRIATE SPECTRUM ALLOCATIONS.

LMCC represents one of the most spectrally efficient user groups licensed by the FCC. The PLMRS allocations support an extraordinary number and diversity of communications systems and users remain committed to deriving even more intensive use of their assigned spectrum.¹³

Nonetheless, as the opportunities to use technology to drive greater operational productivity expand, so will the spectrum needs of this community. Some emerging applications will not be able to achieve the optimal levels of efficiency if implemented on existing, heavily encumbered channels. All PLMRS user groups, including, but not limited to, public safety entities and other organizations providing essential services to the American public, must have predictable access to required amounts of spectrum if they are to take advantage of ongoing technological developments and continue to meet their communications needs.

The FCC apparently shares a belief that even enhanced spectrum management is no substitute for adequate spectrum resources, at least in respect to the consumer-oriented wireless

¹² The CMRS-public safety interference problem that has developed at 800 MHz is but the most recent example of the need to establish technical parameters within and between bands in advance of system deployment.

¹³ In fact, LMCC members long have urged the Commission to adopt a final decision in WT Docket No. 99-87 and establish a date certain by which licensees in the “refarmed” bands will be required to convert to more efficient technology. LMCC is pleased to see that the FCC has responded to this industry request in an Order released earlier this week.

services. The Commission's recent proposal to reallocate an additional 30 MHz of spectrum for advanced wireless services, the so-called "Third Generation" of commercial wireless offerings, is a testament to the agency's commitment to promote the availability of new services.¹⁴ LMCC is confident that the Commission will display an equal commitment to satisfying the communications requirements of the public safety entities and other businesses that rely on PLMRS systems to meet ongoing obligations to the public they serve.

VI. CONCLUSION

For the reasons described above, LMCC recommends that the FCC proceed promptly to act in a manner consistent with the positions expressed herein.

Respectfully Submitted,

s:// Larry A. Miller

Larry A. Miller
President

Land Mobile Communications Council
1110 N. Glebe Rd., Suite 500
Arlington, VA 22201-5720
(703) 528-5115

Date: February 28, 2003

¹⁴ See *Third Report and Order, Third Notice of Proposed Rulemaking and Second Memorandum Opinion and Order*, ET Docket no. 00-258, FCC 03-16 (rel. Feb. 10, 2003).

