

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

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

COMMENTS OF MARCUS COMMUNICATIONS, LLC

Marcus Communications, LLC (“Marcus”), by its attorneys and pursuant to the invitation extended by the Federal Communications Commission (“FCC” or “Commission”) in its Public Notice dated June 6, 2002,^{1/} hereby submits the following Comments responsive to the Commission’s inquiries relevant to spectrum policy.

I. BACKGROUND

Marcus, or one of its affiliates,^{2/} has been in the business of providing two-way radio services to customers in Connecticut and the northeastern United States for 34 years. It has satisfied its customers’ requirements in a variety of ways. It has operated specialized mobile radio (“SMR”) systems, community repeater facilities, and was recently the high bidder for licenses that permit the use of channels formerly dedicated for paging operations. It currently provides VOICELINKsm two-way radio service throughout Connecticut and provides HOMELAND DEFENSE NETWORKsm communications services to public safety and

^{1/} *Spectrum Policy Task Force Seeks Public Comment on Issues Related to Commission’s Spectrum Policies*, ET Docket No. 02-135, *Public Notice* (rel. June 6, 2002). (“Public Notice”).

^{2/} Marcus, Marcus Spectrum Holdings, LLC and other entities with substantially common ownership have offered, and are offering, communications services. All are referenced herein as “Marcus” for convenience.

emergency response organizations. Marcus plans to expand its network to cover the Economic Areas (“EA”) that include both Boston and New York.

In addition to providing communications services over systems that it owns and/or operates, Marcus assists customers, including many public safety agencies, ambulance services, and others whose use of the spectrum promotes the safety of life and property, with the planning and installation of two-way communications systems designed to meet their internal communications requirements.

Marcus has also been involved in planning the communications systems of major special events. It has assisted several Federal agencies, including the Federal Bureau of Investigation, the Immigration and Naturalization Service, and the Drug Enforcement Administration with communications requirements. It has provided telecommunications consulting services to broadcasting, cable and telephone companies. Principals of Marcus have been involved in the development of emerging communications technologies, have been awarded several patents and industry awards, often speak at national conferences on spectrum use, and have been instrumental in resolving spectrum interference issues. Accordingly, Marcus has first hand knowledge of, and extensive background in, the use of frequency assignments allocated for two-way radio use.

Over the past two decades, the Commission has dramatically changed the methods by which spectrum is licensed. In the past, limited spectrum was licensed for specific purposes, in narrow eligibility categories, to licensees at particular geographic locations. In virtually all of its recent cases, the Commission now authorizes significant spectrum capacity over broad geographic areas, in many cases allowing the licensee of the spectrum to determine the purposes for which the spectrum will be employed. Marcus believes that this approach, in most instances, results in more efficient use of spectrum. In much of the spectrum allocated for use under Part

90 of the FCC's rules, however, licenses continue to be issued as they have been in the past. The Commission should begin to take steps to convert spectrum dedicated for use under Part 90 on a site-by-site basis, to geographic area licenses, with flexibility for the licensee to offer the type of services that it believes appropriate. Accordingly, Marcus is pleased to have the opportunity to submit the following Comments.^{3/}

II. COMMENTS

A. The Commission Should “Re-Band” the Spectrum Between 450-470 MHz

Marcus urges the Commission to begin the process of re-examining the use of site-by-site licensing under Part 90 by “re-banding” the spectrum between 450-470 MHz to allow more efficient use of the spectrum. Marcus is aware that the FCC has, in the past, resisted requests to restructure the 450-470 MHz band.^{4/} Marcus is also aware that the FCC is currently considering a plan pursuant to which certain frequency assignments in the band are being considered for use in a “low power” pool.^{5/} Nevertheless, there are several reasons for the FCC to revisit its approach to this band.

First, and as the *Public Notice* recognizes, increasingly intense use of the spectrum requires a new analysis of spectrum use. The frequency coordination process, which has

^{3/} Except as otherwise specifically noted herein, Marcus' comments are directed principally at that element of the Public Notice entitled “Market-Oriented Allocation and Assignment Policies.”

^{4/} See, e.g., *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; Establishment of Public Service Radio Pool in the Private Mobile Frequencies Below 800 MHz; Petition for Rule Making of The American Mobile Telecommunications Association*, WT Docket No. 99-87, *Report and Order and Further Notice of Proposed Rulemaking*, 15 FCC Rcd 22709 ¶¶ 6, 105-107 (2000)(rejecting the American Mobile Telecommunications Association's request to restructure the licensing framework for frequencies in the 450-470 MHz band).

^{5/} See *Amendment of Part 90 of the Commission's Rules and Policies for Applications and Licensing of Low Power Operations in the Private Land Mobile Radio 450-470 MHz Band*, WT Docket No. 01-146, *Notice of Proposed Rulemaking*, 16 FCC Rcd 14946 (2001).

governed a significant amount of the use of the 450-470 MHz band, has generally created efficient use of that spectrum. However, that process is predicated on the use of one, or a limited number of frequency assignments by a licensee at a single geographic site. Advanced communications systems are no longer designed to operate with one channel at one location. Therefore, and as the FCC has implicitly recognized by abandoning the site-by-site licensing approach, it is more efficient to permit licensees to access more spectrum, and to use that spectrum over a geographic area.

Second, and as noted in more detail below, the eligibility categories for the spectrum at 450-470 MHz are arranged in an interleaved fashion. As the Commission has discovered, while this arrangement may have been useful once, it now has the potential of creating significant interference among incompatible classes of users.^{6/} Even with no meaningful instances of interference between classes of users today, the interleaved nature of the eligibility categories implicitly restricts users from exploring all technology options.

Finally, there are few alternatives for that segment of the telecommunications marketplace that desires low-cost, limited range, high-feature two-way radio services. There are many excellent consumer oriented options for wireless communications services. Many of these services, most notably those offered by Nextel Communications, Inc. (“Nextel”), also feature dispatch or similar services pursuant to which calls need not be routed through the public, switched telephone network (“PSTN”). However, despite the availability of this dispatch option in connection with mobile telephone service, the fundamental nature of, and pricing for, these services remains driven by the mobile telephone marketplace. There remains a market segment that is better served by services that are not designed for mobile telephony. While the FCC has

^{6/} *Improving Public Safety Communications in the 800 MHz Band; Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels*, WT Docket No. 02-55, *Notice of Proposed Rulemaking*, 17 FCC Rcd 4872 ¶ 4 (2002)(“800 MHz NPRM”).

taken some measures to address the needs of this market segment,^{7/} the 450-470 MHz spectrum can be better used to further meet these needs.

B. The Current Use of the 450-470 MHz Band

The 450-470 MHz band is currently dedicated for use by various services. The following is a broad outline of the current use of the spectrum:^{8/}

Band	FCC Rule Part	Current Use
450-451	73	Broadcast remote pick up
451-453	90	Non public safety land mobile
453-454	90	Public safety land mobile
454-455	22	Auctioned paging, air-ground
455-456	73	Broadcast remote pick up (paired with 450-451)
456-458	90	Non public safety land mobile (paired with 451-453)
458-459	90	Public safety land mobile (paired with 453-454)
459-460	22	Auctioned paging, air-ground (paired with 454-455)
460-470	90 ^{9/}	Public safety and non-public safety, with approximately eight (8) sub-bands (4 paired sub-bands) of interleaved public safety and non-public safety

There is approximately 3.5 MHz of public safety spectrum in the band and approximately 12 MHz of Part 90 non-public safety spectrum in the band. The remainder of the spectrum is principally allocated for common carrier or broadcast purposes.

^{7/} See, e.g., *Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules*, WT Docket No. 99-168, *First Report and Order*, 15 FCC Rcd 476 (2000); *Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules*, WT Docket No. 99-168, *Second Report and Order*, 15 FCC Rcd 5299 (2000)(collectively “700 MHz Proceedings”); *Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz, Government Transfer Bands*, WT Docket No. 02-08, *Notice of Proposed Rulemaking*, 17 FCC Rcd 2500 (2002).

^{8/} The following chart is for illustrative purposes only and is not designed to precisely indicate all uses of the spectrum.

^{9/} There is also limited maritime (Part 80) and general mobile radio service (Part 95) use of the spectrum in certain parts of this band.

The above allocation highlights why the 450-470 MHz band is inefficiently used today. The spectrum is allocated in comparatively small spectrum segments, which impedes the introduction of technology that may require the use of more spectrum. Further, the spectrum allocated for use under Part 90 of the FCC's rules is dedicated for use on a shared basis, one channel at a time, at specific geographic coordinates.^{10/}

C. Marcus' Re-Banding Plan

In order to make more efficient use of this spectrum, the FCC should re-band the spectrum between 451-454 MHz and 456-470 MHz and, to the extent that there are mutually exclusive applicants for the spectrum, conduct competitive bidding to license the spectrum that the Commission determines not to reserve for public safety services.^{11/} As noted above, that spectrum is principally used for either Part 22 or Part 90 services. The Commission recently auctioned spectrum in the band 454-455/459-460 MHz for paging services. Marcus expects that this paired spectrum will be employed to offer commercial services to the public. In creating a re-banding plan, the Commission should endeavor to create a band of contiguous spectrum for commercial operations. The remainder of the spectrum, not dedicated for commercial operations, should be dedicated for public safety use. In particular, the Commission should create a commercial allocation at 451-455/456-460 and 463-465/468-470 MHz and a public safety allocation at 460-463/465-468 MHz.

Marcus' proposed band plan is attractive for several reasons. First, it provides significantly more spectrum for public safety than is allocated today in these bands. As noted above, there is approximately 3.5 MHz of spectrum available for public safety purposes in this

^{10/} Marcus recognizes that the FCC's rule now permits the use of trunked systems with multiple channels on an exclusive basis. However, the impediments to the creation of such systems continue to favor site-by-site, single channel licensing.

^{11/} Marcus does not propose including Part 73 remote pick up spectrum in this re-banding plan.

band today. Under Marcus' plan, there would be 6 MHz of spectrum available for public safety operations. Second, the band plan creates a block of contiguous spectrum for commercial users, and more importantly, for public safety licensees. Public safety operations will no longer be interleaved with many non-public safety system sub-bands.

D. Implementation Issues

In order to promote efficient use of the spectrum and to implement Marcus' proposal, the FCC should immediately freeze the acceptance of additional applications for systems in the 450-470 MHz band.^{12/} Thereafter, the FCC should adopt regulations that permit the issuance of geographic area "overlay" licenses in this spectrum.^{13/} Such overlay licensees would be required to protect incumbent licensees.^{14/} Protection criteria would be established to protect licensees at their licensed sites. Incumbent geographically licensed entities would be protected throughout their licensed service area.

In the future, non-public safety licensees in the new public safety bands (460-463/465-468 MHz) would no longer be able to renew their authorizations at any date that is ten (10) years from the time that the FCC adopts the regulations proposed herein. This would create "clear"

^{12/} The Commission has frozen applications prior to auction on numerous occasions. *See, e.g., FM Minor Change Application Freeze; Notice Regarding Freeze on the Acceptance of Commercial and Noncommercial Educational FM Minor Change Construction Permit Applications from March 7, 2001 to March 19, 2001, Public Notice*, 16 FCC Rcd 926 (2001); *Amendment of the Commission's Rules Concerning Maritime Communications*, PR Docket No. 92-257, *Second Report and Order and Second Further Notice of Proposed Rulemaking*, 12 FCC Rcd 16949 ¶ 132; *Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems*, WT Docket No. 96-18, *Notice of Proposed Rule Making*, 11 FCC Rcd 3108 ¶ 139 & n.270 (1996); *Licensing of General Category Frequencies in the 806-809.750/851-854.750 MHz Bands, Order*, 10 FCC Rcd 13190 ¶ 3 (1995).

^{13/} Marcus does not recommend here the particular geographic areas over which licenses should be issued or the amount of spectrum that should be contained in each license. It presumes that such issues will be fully addressed in a subsequent rule making.

^{14/} Incumbent licensees regulated under Part 80 and Part 95 would be grandfathered indefinitely and would be required to be protected from harmful interference from geographic area licensees.

spectrum in due course for public safety operations in the band. Public safety licensees would be “grandfathered” indefinitely in non-public safety bands.^{15/} However, geographic area licensees of non-public safety spectrum populated by incumbent public safety entities would have an incentive to pay for relocation of the public safety entities to the public safety spectrum, or continue to provide interference protection to the public safety licensees.

Marcus recognizes that, in creating two categories of licensees in the 450-470 MHz bands, it has excluded entities that use communications systems to meet their internal requirements. Marcus proposes that these entities be permitted to secure licenses in the “commercial” segments of the 450-470 MHz band.^{16/} In light of the heavily encumbered nature of this spectrum, Marcus expects that most traditional providers of mobile telephony will be uninterested in securing licenses in this spectrum and that, to the extent that there are mutually

^{15/} Nevertheless, Marcus expects that public safety entities will prefer the contiguous public safety band created by its proposal. Marcus also notes that the Commission has allocated spectrum at 700 MHz for public safety licensees. *See* Reallocation of Television Channels 60-69, the 746-806 MHz Band, ET Docket No. 97-157, 13 FCC Rcd 21578 (1998). Public safety entities may also, as a result of the proceeding designed to evaluate interference to public safety systems in the 800 MHz band, be permitted to use spectrum other than the spectrum for which they are now authorized. *See* 800 MHz NPRM, 17 FCC Rcd. at 4872. Accordingly, the six (6) MHz of spectrum proposed here for public safety use may even be more than public safety entities require.

^{16/} Marcus recognizes that entities that use spectrum to satisfy their internal communications requirements may only require site-by-site licensing. As the FCC responsibly departs from a site-by-site licensing approach, it has created other mechanisms for these entities to satisfy their internal communications needs within the context of geographic licensing. First, as noted above, these entities are permitted to participate in the competitive bidding process. Second, the Commission has created band managers, has issued licenses for band managers at 700 MHz, and is contemplating the authorization of band managers for licensing in other bands, including 1.4 GHz and the millimeter wave bands. *See, e.g., Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz, Government Transfer Bands*, WT Docket No. 02-08, 2002 FCC Lexis 587 (2002); *Allocations and Service Rules for the 71-76 GHz, 81-86 GHz and 92-95 GHz Bands; Loea Communications Corporation Petition for Rulemaking*, WT Docket No. 02-146, *Notice of Proposed Rulemaking* ¶¶ 80-81 (rel. June 26, 2002). This band manager arrangement will permit others to coordinate site-by-site use of the spectrum and allow the FCC to pursue a geographic licensing approach. Thus, geographic area licensing and the continued availability of spectrum for large, internal use systems is not incompatible.

exclusive applications and a need for competitive bidding, the cost to obtain overlay licenses will be comparatively low. The anticipated low prices for these licenses will enable these internal use licensees to fully participate in obtaining spectrum. It will also encourage participation by commercial providers with insufficient resources to participate in many FCC competitive bidding processes.

E. Barriers to Use of New Technologies

The Commission asks what new technologies exist that, if deployed, could improve spectral efficiencies and utilization and if there are barriers to their deployment.^{17/} There are many technologies that are available for mobile telephony, but fewer available for two-way radio services. Marcus encourages the FCC to examine why this important industry segment appears to lag behind the remainder of the wireless industry. For example, Marcus is aware of one technology, TETRA (Terrestrial Trunked Radio), which is being widely used in other countries, is not being used in the United States today.^{18/} This technology appears to Marcus to be attractive for providing advanced land mobile services in the 450-470 MHz band.^{19/} In light of the size of the United States market, it is curious that the technology is not available here. Manufacturers appear to be reluctant to introduce TETRA to the United States because of concerns regarding the use of proprietary intellectual property for which they are not licensed. While Marcus does not expect the Commission to inject itself into manufacturers' intellectual property rights, it does have an obligation under the Communications Act to promote new

^{17/} *Public Notice* at 5 (referring to question 21).

^{18/} Terrestrial Trunked Radio (*TETRA*) is an open digital standard defined by the European Telecommunications Standards Institute (*ETSI*). See www.tetramou.com.

^{19/} The attractive features of TETRA include its current availability in the 450-470 MHz bands in other countries, the fact that it is compatible with the FCC's channelization scheme (of 25 kHz derived channels), the fact that, at least abroad, there are numerous vendors, and its comparatively low cost.

technologies.^{20/} As part of that obligation, it should ensure that its equipment approval rules prohibit manufacturers from failing to license technology on a fair and reasonable basis, consistent with applicable patent, copyright, and other intellectual property laws and regulations.

III. CONCLUSION

Marcus hereby respectfully submits the foregoing comments and asks the FCC to proceed in a manner consistent with the views expressed herein.

Respectfully submitted,

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July 8, 2002

^{20/} See 47 U.S.C. § 7.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Comments of Marcus Communications, LLC was served, by the noted methods, on the 8th date of July 2002, on the following:

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