

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

In the Matter of)	
)	
Amendment of the Commission’s Rules Concerning Maritime Communications)	PR Docket No. 92-257
)	
Petition for Rule Making filed by Regionet Wireless License, LLC)	RM-9664
)	

Supplement to Reply to
Opposition to Petition for Reconsideration
(Ex Parte filing)

Warren C. Havens (“Havens”) and Telesaurus Holdings GB, LLC (“Telesaurus”) (in which Havens holds majority controlling interest) (together, “LMS Wireless,” their DBA [“LMSW”]), submitted a Reply to the Opposition filed by Mobex to the LMSW petition for reconsideration filed in the above-captioned matter (the “Petition”) regarding certain decisions made in the *Second Memorandum Opinion and Order and Fifth Report and Order* in the above-captioned proceeding released April 8, 2002 (the “5th R&O”). This is a supplement to the Reply, filed on an Ex Parte basis (the “Supplement”). LMSW ask that this Supplement be considered for a full and complete record in this proceeding, and since the Supplement deals solely with the needs of the Public Safety community for spectrum in the upper VHF (mid 100 to 300 MHz range) and considering that matter is clearly in the public interest.

In the Reply, LMSW responded to Mobex’s erroneous assertion in its Opposition that there is no need for more Public Safety spectrum as described in the Petition. In the Petition and its attachment material, and in its Reply, LMSW cited various documents from the Public Safety community documenting this need which remains critical even considering the Public Safety

allocations in 700 MHz and 4.9 GHz as discussed below. The following, excerpts from two documents from the Public Safety Wireless Network,¹ make this further clear, including the need for spectrum in the upper VHF range that includes AMTS spectrum.

In the below, underlining and text in brackets are added, and footnotes are in original. The second document quoted below was filed with the FCC in August 2002, and confirms and reemphasizes the findings of the below January 2000 (pre 9-11-2001) document.



Public Safety Radio Frequency Spectrum: Highlighting Current and Future Needs

January 2000
Final

INTRODUCTION

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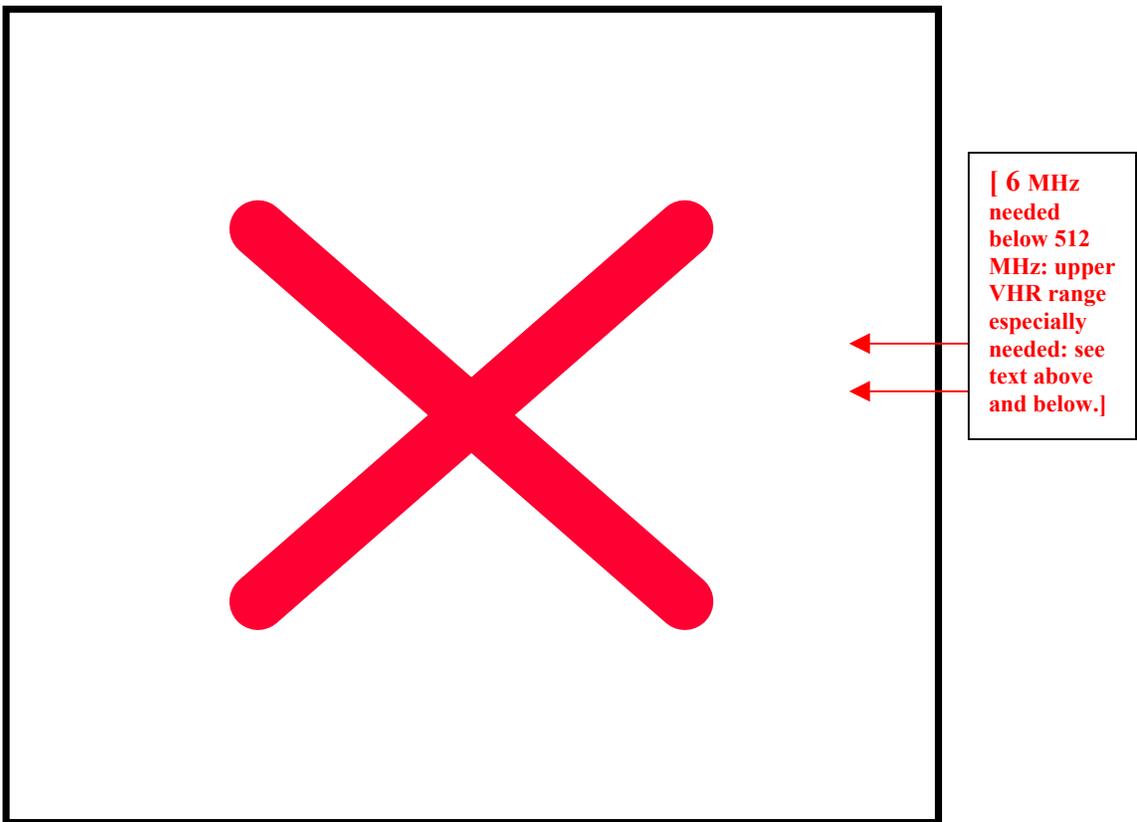
The Public Safety Wireless Advisory Committee (PSWAC) identified these spectrum shortages in its final report to the Federal Communications Commission (FCC) on September 11, 1996. PSWAC argued that to meet the demands placed on public safety communications, an additional 97 megahertz (MHz) of spectrum was required by 2010.² In 1998, the FCC allocated 24 MHz of spectrum [700 MHz] to public safety in WT Docket 96-86, partially satisfying these recommendations. Nevertheless, spectrum is still insufficient to meet the public safety community's general communications needs. Public safety mission requirements have increased significantly. New technologies and applications, particularly in the data arena, aid public safety operations, but also require increased bandwidth and hence additional spectrum. Meanwhile, the need for interoperable communications among users has also grown. All these factors have made the need for public safety spectrum more acute than ever. [This was written before 9-11-2001.]

¹ The Petition's attachment, the ATLAS proposal of LMMS, referenced other PSWN spectrum studies with similar findings.

² *Public Safety Wireless Advisory Committee (PSWAC) Final Report p. 3.*

According to PSWAC recommendations, the public safety community still requires 2.5 MHz of spectrum under 512 MHz for interoperability purposes, 3.8 MHz for voice and narrowband data requirements, and 67.2 MHz for wideband data and video applications. Figure 1 compares the public safety community's current spectrum allocations with its spectrum needs. The left column represents the amount of spectrum currently allocated to public safety, including the 24 MHz of spectrum recently assigned. The right column represents the remaining 73.5 MHz of spectrum that is still required to satisfy the PSWAC recommendations. Of the recently allocated 24 MHz, 12 MHz is allocated to fulfill voice and other narrowband requirements, and the remaining 12 MHz is intended to meet requirements that rely upon wider-bandwidth channels.³

Figure 1
Current Public Safety Spectrum Allocations and Future Spectrum Needs



Additional spectrum is still required for voice and narrowband data communications, but given the PSWAC recommendations and the recent spectrum

³ *FCC, WT Docket 96-86, First Report and Order and Third Notice of Proposed Rulemaking, para. 43. September 29, 1998.*

allocation to public safety, the most immediate need for spectrum is in the following areas:

- Wideband Data and Video Applications
- Interoperability Spectrum Below 512 MHz – Public safety entities at all levels of government need to work together to meet mission requirements. This requires coordination of communications across and among agencies, also referred to as interoperability. Currently, there is only a small amount of spectrum allocated to the public safety community for interoperability. This is particularly true below the 512 MHz bands, where the majority of public safety organizations operate.

. . . .

944–960 MHz Band

This spectrum is desirable because it is close to the 800 MHz spectrum used by local and state public safety entities. The equipment currently used in the 800 MHz bands may be designed to operate in this band. [Same regarding 902-928 MHz.]

. . . .

INTEROPERABILITY SPECTRUM BELOW 512 MHZ

. . . . While this communications capability continues to become a requirement of everyday public safety operations, current spectrum limitations hinder ability of agencies' to successfully communicate. In fact, more than a third of the public safety agencies report that lack of interoperability has affected their ability to interact with other agencies in surrounding jurisdictions. Lack of critical communications capability curtails the ability of public safety agencies to fully meet their missions, often putting life and property at unnecessary risk.

Public safety has been allocated 71.55MHz of spectrum with only 4.7 percent (3.363 MHz) being set aside for interoperability purposes. Moreover, interoperability spectrum is not evenly distributed. Although public safety assignments are spread over 11 frequency bands, interoperability spectrum exists only in 4 of these bands (i.e., 150-174, 406.1-420, 764-776/794-806, and 821-824/866-869 MHz - See Table 2). Public safety agencies using the remaining seven bands face major interoperability obstacles, because communications systems currently cannot operate in multiple bands. Interoperability spectrum is needed in the bands that public safety agencies currently use below 512 MHz.

Table 2
Public Safety Interoperability Spectrum Allocations

Public Safety Frequency Band (MHz)	Total Bandwidth (MHz)	Spectrum Allocated for Public Safety Interoperability (MHz)
25–50	25	0
72–76	4	0
138–150.8	12.8	0
<u>150–174</u>	<u>24</u>	<u>.338</u>
<u>220–222</u>	<u>2</u>	<u>0</u>
406.1–420	13.9	.3
450–470	20	0
470–512	42	0
764–776 794–806	24	2.6
806–821 851–866	30	0
821–824 866–869	6	.125

Efforts to gain spectrum for interoperability should be focused on lower bands for several reasons. Interoperability spectrum has been designated in the 800 MHz range (e.g., National Public Safety Planning Advisory Committee [NPSPAC]); public safety has recently received allocations in the 700 MHz band, including 2.6 MHz strictly for interoperability purposes; and most agencies operate at least one channel in the very high frequency (VHF) band. In addition, PSWAC determined that an additional 2.5 MHz of interoperability spectrum was required below 512 MHz for public safety use.

Currently, public safety agencies operate in eight different bands below 512 MHz. However, 71 percent of public safety agencies operate at least one channel in the high-band VHF range and 29 percent in ultrahigh frequency (UHF) range.

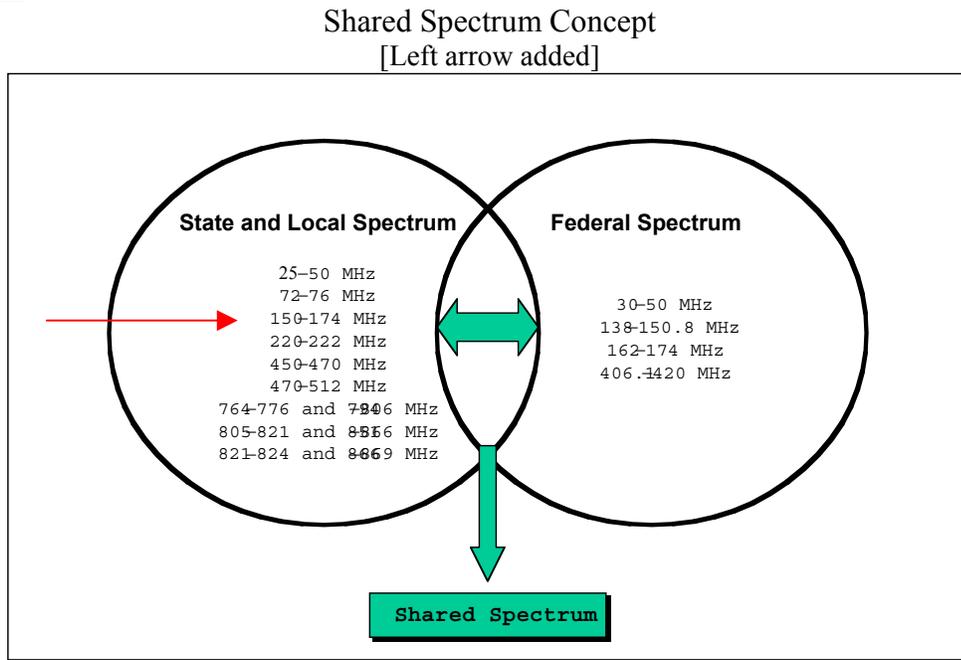
Therefore, the 2.5 MHz required should be proportionally drawn from allocations in these two frequency ranges. Thus, to meet the needs of public safety agencies, 1.775 MHz should be designated for interoperability purposes in the high-band VHF frequency ranges [including 220 MHz range, see preceding chart] and .725 MHz should come from spectrum adjacent to current public safety UHF bands.

SPECTRUM FOR SHARED USE

[Sharing as noted below is a core capability that would be enabled by the LMSW ATILS proposal presented in the Petition.]

Another possible solution to alleviate the spectrum shortage experienced by public safety is spectrum sharing, in which a number of agencies establish agreements to share assigned frequencies. Shared systems allow the pooling of spectrum resources and can promote efficient use of spectrum. Sharing Federal Government spectrum with local and state public safety users would indirectly increase the amount of spectrum available to users. This concept is illustrated in Figure 2.

Figure 2



The FCC recently established rules that allow federal organizations to share, under certain circumstances, state and local licensee spectrum in the newly allocated public safety 700 MHz bands. . . .

. . . . To justify the cost of new equipment, public safety agencies must be guaranteed that shared spectrum will remain accessible to them in the future. Without this assurance, neither party has much incentive to pursue a shared system arrangement. The Federal Law Enforcement Wireless Users Group (FLEWUG) clarified this type of understanding in a paper filed with the FCC on September 16, 1999. FLEWUG emphasized that co-equal access was critical to ensure the success of these agreements.

The implementation of shared systems supports the broad-based adoption of technologically advanced radio communications equipment and services, which, in turn, greatly enhances public safety operations. Although technological advancement can be achieved through single-agency systems, shared systems accelerate the introduction and integration of new technologies and applications throughout the public safety community. The addition of shared spectrum will directly increase the spectrum available for public safety, serve as a model for co-equal access, and impress upon the public safety community, the public, and the regulators the feasibility of such arrangements.

CONCLUSIONS AND RECOMMENDATIONS

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- Interoperability Spectrum Below 512 MHz– The FCC should grant the public safety community additional spectrum below 512 MHz to meet interoperability communications needs, as recommended by PSWAC. This spectrum should be allocated proportionally to the number of users operating in the VHF and UHF bands under 512 MHz. Specifically, 1.775 MHz should be designated for interoperability purposes in the high-band VHF frequency ranges and .725 MHz should come from spectrum adjacent to current public safety UHF bands.
- Shared Spectrum– The federal community and the NTIA should formulate policies that encourage shared spectrum arrangements. The rules governing federal frequency bands should be modified to allow similar sharing arrangements as those being developed in the recently allocated 700 MHz public safety bands.

PSWN reemphasized the above year 2000 report in its August 7, 2002 Reply Comments in WT Docket No. 02-55 (In the matter of Improving Public Safety Communications in the 800 MHz Band) in Section III: “Public Safety Agencies Urgently Need Additional Spectrum to Meet Mission-Critical Communication Requirements.” This included restatement of its need for spectrum below 512 MHz: This Section states:

11. The PSWN Program reiterates its opinion that the public safety community's spectral resources are seriously overburdened, and additional spectrum is needed particularly in the channels below 512 MHz to meet the interoperability and day-to-day communication needs of many local, state, and tribal agencies. As an established baseline, the PSWN Program concurs with the estimated spectrum requirements set forth in the Public Safety Wireless Advisory Committee (PSWAC) Final Report of 1996). The PSWAC Report recommended the allocation of an additional 97.5 MHz of spectrum to support public safety communications needs through 2010. Since then, the Commission has noted that additional spectrum requirements, such as support for the Homeland Security program, may be needed

12. While recent allocations made by the Commission have yielded an additional 24 MHz of spectrum in the 700 MHz band and 50 MHz of spectrum in the 4.9 gigahertz (GHz), the current dedicated spectrum falls short by 23.5 MHz In many large jurisdictions, the 700 MHz public safety channels cannot be accessed until the digital television transition from analog channels, still occupied by incumbent licensees, has been completed. . . .

Respectfully submitted,

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