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

In the Matter of	)	
	)	
Use of Signal Boosters and Other Signal Amplification Techniques Used With Wireless Services	)	WT Docket No. 10-4

COMMENTS

Pyramid Communications, Inc. ("Pyramid"), through counsel and pursuant to the Commission's Public Notice of January 6, 2010,[1] hereby respectfully submits its comment in the above-referenced proceeding.

I. BACKGROUND

Pyramid, headquartered in Huntington Beach, California, is a designer and manufacturer of wireless data and voice transmission equipment. Committed to quality and customer satisfaction, Pyramid has long been a leading manufacturer in the Public Safety and Business/Industrial markets. As a manufacturer of Vehicular Repeater Units ("VRS"), a type of signal amplification technique, Pyramid has a keen interest in this proceeding.

The Commission's Public Notice relates to three Petitions for Rulemaking and two Petitions for Declaratory Ruling regarding the proper use of signal boosters on frequencies licensed under Parts 22, 24, 27 and 90 of the Commission's Rules. As the Commission notes in footnote 1 of the Public Notice, its discussion of "signal boosters" in this proceeding is intended to include all manner of repeaters that extend the coverage area of Part 90 service licensees. Pyramid will restrict its comments to this part of the proceeding, and leave to other parties the

[1] DA 10-14, released January 6, 2010.

discussion of in-building radiation systems and potential interference caused by devices that amplify signals on the donor system's frequencies.

Although numerous jurisdictions are re-writing local zoning rules to mandate that public safety communications are available in buildings, the reality is that an overwhelming number of buildings lack Bi-Directional Amplifiers ("BDAs") or similar technology to ensure that a firefighter or police officer is able to communicate back to the dispatch center, or even to first responders just outside the building, in a crisis. VRS units provide vital extended radio coverage inside of such buildings, and serve to protect life, safety and property of both public safety officers and local citizens. VRS units offer a cost effective, portable solution for such communications, at least until such time as all building codes have been harmonized with the urgent in-building communications needs of first responders.

Functionally, a VRS unit is a repeater approximately the size of a large textbook which is mounted in the vehicle of a fire or police car or truck. When first responders go into the building, the firefighter or officer communicates to the VRS unit on a frequency which is not affiliated with the agency's main trunked radio system. The VRS unit then transmits that communication to the main repeater site on the agency's main frequencies using existing mobile radios which are also mounted in the vehicle. In other words, the VRS unit utilizes a separate radio frequency in the short distance between the user in the building and the vehicle outside, and the VRS unit re-transmits that communication onto the main system through the mobile radios in the vehicle.

In order to perform that re-transmission of the signal from one frequency to another, current filter technology requires a separation of at least 2-5 MHz from every frequency in the mobile radio. In other words, if the agency's system was transmitting on 156.165 MHz, the VRS

unit would need to use a frequency lower than 154.165 MHz, or higher than 158.165 MHz (in addition to similar separation with the other frequencies in the mobile radio).[2]

VRS units were first approved for police use in 1966.[3] Subsequently, fire service eligibility was added in 1970.[4] Pyramid itself has sold over 40,000 VRS units for public safety use during this time. Currently, VRS units are typically licensed with the "MO3" station class code. Generally, these units are licensed pursuant to Section 90.247 of the Commission's Rules.

II. COMMENTS

While Vehicular Repeater Units have for decades been recognized by the Commission as a valid means to eliminate dead zones within a licensee's authorized service area, their use has become increasingly important in the past few years.[5] Unfortunately, there is no dedicated spectrum for VRS use, thus hampering the wide-spread, non-interfering use of VRS units.

On this basis Pyramid requests an allocation of spectrum to specifically address the VRS need. The need is particularly acute in the VHF band, where there is virtually no allocated spectrum which can be used for VRS units which is: (1) sufficiently distant from the 150-159 MHz public safety frequencies; and (2) not already saturated with existing base/mobile operations. Previously, a limited number of inter-service sharing applications have been granted to utilize Business/Industrial frequencies, but such applications are now typically refused coordination. Thus, many public safety users in the 150 MHz have been unable to license VRS operations.

---

[2] Closer frequency separation would require larger filters, which are physically too large for mobile applications.

[3] *Report and Order*, Docket No. 14028, 33 FR 8598, 13 FCC 2d 166 (1966).

[4] *Order*, RM-1443, FCC 70-232 (1970). *See also*, *Amendment of Section 91.554(b) of the Commission's Rules to Permit Use Of Vehicular Radio Units Operating On Frequencies Allocated to the Central Station Commercial Protection Industry as Mobile Repeaters and to Permit Use of Base Stations on Those Frequencies to Transmit to Receivers at Police and Fire Stations*, FM-1513, 34 FCC 2d 850 (1972).

[5] *See*, for example, *Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band*, PS Doc. No. 06-229, 22 FCC Rcd 20290 (2007) at para. 5; City *of Phoenix, Arizona*, 23 FCC Rcd 16669 (PSHSB 2008) at n. 15.

Pyramid requests that the Commission amend its Rules to provide for three specific VHF allocations for VRS use, as detailed below:

A. 170–172 MHz Forest Firefighting and Conservation Frequencies – Section 90.265(c)

Pyramid requests that the Commission amend Section 90.265(c) of the Commission's Rules. This Rule allocates certain 170, 171 and 172 MHz frequencies for Forest Firefighting and Conservation use. These channels, which can already be used for VRS units, are limited to use in fighting forest fires. Pyramid believes that lifting of the forest fire only limitation can result in an additional nine frequencies which could be used for VRS operations not only to fight forest fires, but also building fires. An extension of this operation would not negatively impact any primary users of the spectrum.[6]

B. 173 MHz Public Safety/Business/Industrial Frequencies – Section 90.20(d)(34)

In 1977, the Commission allocated six frequencies in the 173 MHz band for fixed non-voice operations with low power.[7] In the proceeding, the Commission sought to create rules for the frequencies similar to the Business Radio Service "offset" frequencies.[8]

Since the allocation of the spectrum, much has changed in the band from a technological standpoint. For example, in 1995 FCC subsequently its Rules to permit high power use of the Business Radio Service offset frequencies.[9] Recently, as part of the Commission's "Narrowbanding" initiative, the Land Mobile Communications Council ("LMCC", an umbrella

---

[6] Currently, Section 90.265(c)(4) limits operation of certain of the frequencies to areas west of the Mississippi River, while Section 90.265(c)(5) limits operation of other of the frequencies to areas east of the Mississippi River. Pyramid does not propose to amend these rule sections.

[7] *Amendment of Parts 89 and 91 of the Commission's Rules and Regulations to Make Available Four 173 MHz Splinter Frequencies To The Local Government and Manufacturers Radio Services for Telemetry and Remote Control Operations*, Docket No. 20149, 65 FCC 2d 898, 41 RR 2d 323 (1977). The frequencies are: 173.2375, 173.2625, 173.2875, 173.3125, 173.3375 and 173.3625 MHz.

[8] *Id*. at para. 18.

[9] *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 Assignment Policies of the Private Land Mobile Services*, Report and Order and Further Notice of Proposed Rule Making, PR Docket No. 92-235, 10 FCC Rcd 10,076 (1995).

groups representing all of the Part 90 frequency advisory committees), has developed frequency coordination standards by which radio systems can be coordinated on adjacent frequencies where bandwidths overlap.

On this basis, Pyramid believes that the time is appropriate for removing the thirty year old restriction on voice operation, allowing for low power VRS operation, on these frequencies and the immediately adjacent frequencies.[10] This can be accomplished by the removal of limitations 33 and 54 in Section 90.20(d) of the Commission's Rules, and amendment of limitation 34 to remove the "remote control and telemetry operations" limitation.

The local, low power use of VRS units makes these units an ideal candidate for shared use of these frequencies.[11] Indeed, VRS units are used in temporary locations, at the time of fires or similar incidents inside of a building. Thus, there is little opportunity for interference to occur in such situations. Further, utilization of LMCC frequency coordination policies will ensure that adjacent channel interference does not occur.

C. Hydrological/Meteorological Data Channels – Section 90.265

Pyramid requests amendment of Section 90.265 of the Commission's Rules to permit secondary use of frequencies currently assigned for transmitting hydrological or meteorological data. Because VRS units are only utilized in and around incident buildings on a temporary basis and operate at low power (2 watts or less), there is little likelihood of interference to primary users in the band. Further, the nature of the primary use, at hydrological plants, generally results in no buildings in the immediate vicinity of the plant which would experience the type of incident in which VRS units would be used.

[10] Specifically 173.20375, 173.210, 173.390 and 173.39625 MHz.
[11] Pyramid believes that the 1 watt limitation in Section 90.20(d)(36) is sufficient to permit VRS operation.

D. The Commission Must Ensure That VRS Operations Are Not Accidentally Restricted

If properly licensed, VRS units are not the cause of interference discussed in the Petitions which led to the opening of this proceeding. In fact, because of the unit's low power and highly localized operation, VRS units have successfully operated on frequencies in the 800 MHz band which are shared with other licensees, without causing interference to the other licensee's operations.

Because the primary focus of this proceeding is interference, Pyramid is concerned that far-reaching new rules might accidentally inhibit the use of VRS units at a time when their use has become ever more important. Therefore, Pyramid urges the Commission to narrowly target rules designed to combat the interference being cause, and limit regulatory changes which negatively impact the expansive use of VRS units.

III. CONCLUSION

Vehicular Repeater Systems are an important part of the public safety community's arsenal of communication tools to ensure that police officers and firefighters do not lose communications once inside of buildings. This proceeding represents a perfect opportunity to review how VRS units are used in public safety, and to ensure that continued operations may flourish, interference-free. Commission action as requested herein greatly increase the number of channels available for VRS operation, and enable users to select the best, least likely-to-cause interference channel for their VRS operations.

WHEREFORE, the premises considered, it is respectfully requested that the Commission act in accordance with the views expressed herein.

Respectfully submitted,

PYRAMID COMMUNICATIONS, INC.

By: Alan S. Tilles, Esquire

It's Attorney

Shulman Rogers Gandal Pordy & Ecker, P.A.
12505 Park Potomac Ave., Sixth Floor
Potomac, Maryland 20854
(301) 230-5200

Date: February 5, 2010