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BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
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 RM-9966

To: The Commission

REPLY COMMENTS OF TRIMBLE NAVIGATION LIMITED

Trimble Navigation Limited ("Trimble"), by its attorneys and pursuant to Sections 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415 and 1.419, hereby replies to the comments filed in response to the Commission's Notice of Proposed Rule Making ("NPRM") in the above-captioned proceeding.[1] The commenters generally support several of the positions advanced by Trimble in its own comments, particularly in regards to the need to increase the amount of spectrum at 450-470 MHz designated for non-voice (i.e., data) operations. Trimble is concerned, however, that certain proposals made in the comments, if adopted, would ultimately undermine this goal by allowing for interfering voice operations on the Group B channels. Trimble urges the Commission to ignore these counterproductive proposals and, instead, adopt rule changes that recognize and respond to the growing demand for low power non-voice communications affecting all sectors of the U.S. economy.

[1] 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, *Notice of Proposed Rule Making*, WT Docket No. 01-146; RM-9966 (released July 24, 2001) ("NPRM").

I. A Cross-Section of Commenters Support Additional Data Spectrum In The 450-470 MHz Band.

At the outset, Trimble notes that many commenters express concern that the NPRM underestimates the need for spectrum by the data user community by failing to provide an adequate amount of spectrum for non-voice operations. Dataradio COR, Ltd. ("Dataradio") observes that when the Land Mobile Communications Council ("LMCC") was developing its consensus plan that ultimately formed the basis of the NPRM, "users and market forecasters were not anticipating the rapid growth in and demand for data solutions that has occurred subsequently."[2] The United Telecom Council ("UTC") believes that the Commission's proposals do not offer sufficient spectrum for data operations generally and in particular for entities using data systems for the control and monitoring of the nation's critical electrical, gas, water and pipeline systems.[3] The Association of American Railroads ("AAR") agrees, and adds that in its role as frequency coordinator for the nation's railroads, "AAR is seeing increased demand for data channels for an increasingly wide variety of remote-control railroad applications."[4] Pacific Crest Corporation ("Pacific Crest") notes that applications employing Real-Time-Kinematic technology have grown to the point that additional frequencies are needed to meet expected demand.[5]

These commenters, representing a cross-section of current and potential low power operators in the private land mobile radio ("PLMR") 450-470 MHz band, make clear that the failure to account for the growing demand for data operations has resulted in a proposed division

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[2] Comments of Dataradio COR, Ltd., WT Docket No. 01-146; RM-9966, at 3 (filed Oct. 12, 2001) ("Dataradio Comments").

[3] Comments of the United Telecom Council, WT Docket No. 01-146, at 6 (filed Oct. 12, 2001) ("UTC Comments").

[4] Comments of the Association of American Railroads, WT Docket No. 01-146, at 3 (filed Oct. 12, 2001).

[5] Comments of Pacific Crest Corporation, WT Docket No. 01-146; RM-9966 at 3 (filed Oct. 12, 2001) ("Pacific Crest Comments").

of channels that heavily favors voice users to the detriment of data users.[6] Moreover, as Trimble and other parties to this proceeding note, the distinction between voice and data is increasingly arbitrary, as the line separating the two technologies is blurred due to the growing use of sophisticated digital equipment by voice-dependent PLMR licensees.[7] Accordingly, Trimble urges the Commission to rectify the data/voice imbalance by adopting a band plan that allows for increased data use of the 450-470 MHz band.

II. Although The Commenters Overwhelmingly Favor Designating The Group B Frequencies For Data Use, Several Would Undercut The Effectiveness Of The Designation By Allowing Secondary Voice Operations There.

A. All Commenters Support The Proposed Designation Of The Group B Frequencies For Data.

Trimble notes that there is universal support for the Commission's proposal to designate the Group B frequencies for data operations, as every commenter who weighed in on the issue favors setting aside a group of channels specifically for non-voice uses.[8] In this regard, Trimble particularly endorses the comments of AES Corporation, which observes that "[b]y dedicating a single channel block to non-voice communications[,] the FCC is anticipating future needs for data communications that will not be subject to interference from voice operations."[9] Given this broad base of support, the Commission should adopt its proposal to set aside the Group B

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[6] See Dataradio Comments at 4 (noting that the LMCC consensus plan designates nine channels to Group A for every one channel designated to Group B).

[7] See, e.g., Comments of Motorola, WT Docket No. 01-146, at 3 (filed Oct. 12, 2001) ("Motorola Comments"); Dataradio Comments at 2.

[8] See, e.g., Comments of the American Petroleum Institute, WT Docket No. 01-146; RM-9966, at 11 (filed Oct. 12, 2001) ("API Comments"); Comments of the Toro Company, WT Docket No. 01-146; RM-9966, at 4 (filed Oct. 12, 2001) ("Toro Comments"); Comment [of the American Water Works Association], WT Docket No. 01-146, at 4 (filed Oct. 12, 2001) ("AWWA Comments"); Comments of the American Mobile Telecommunications Association, Inc., WT Docket No. 01-146; RM-9966, at 3 (filed Oct. 12, 2001); Dataradio Comments at 8.

[9] Comment of AES Corporation, WT Docket No. 01-146; RM-9966, at 4 (filed Oct. 12, 2001) ("AES Comments").

channels for low power, non-voice use and to remove the Group B frequencies from those subject to the Part 90 rule provision that designates telemetry operations as secondary.

B. The Comments In Favor Of "Data Primary" Group B Channels Underestimate The Incompatibility Of Voice And Data Operations.

Although the commenters exhibit strong support for designating the Group B frequencies for data operations, they split on the issue of whether these channels should be "data only" or "data primary." The American Petroleum Institute ("API") and the Toro Company ("Toro") favor designating the Group B frequencies as data primary on the dubious grounds that secondary voice uses there would promote spectrum efficiency.[10] LMCC and UTC adopt a more measured approach by proposing secondary voice uses on the Group B channels only as related and necessary to a licensee's primary data or telemetry operations.[11] Dataradio and the American Water Works Association disagree, and urge the Commission to reserve the Group B channels as data only because of the infeasibility of voice and data shared use.[12] Dataradio specifically believes that the demand for data necessitates the creation of a "safe harbor" for data operations free of the risk of interference from voice operations.[13]

Trimble believes that advocates of data primary operations on the Group B frequencies underestimate the incompatibility of data and voice operations. In Trimble's experience, and in that of other parties to this proceeding, secondary voice use of a data primary channel is difficult because, at any time and without warning, an inopportune voice transmission can completely

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[10] API Comments at 11; Toro Comments at 6.

[11] Comments of the Land Mobile Communications Council, WT Docket No. 01-146, at 9 (filed Oct. 12, 2001) ("LMCC Comments"); UTC Comments at 4. See also Comments of the Personal Communications Industry Association, WT Docket No. 01-146, at 5 (filed Oct. 12, 2001).

[12] Dataradio Comments at 9; AWWA Comments at 4

[13] Dataradio Comments at 9.

shut down a data communications links.[14] In addition, shared use of the Group B channels could have severe economic consequences. For example, losing a data channel to a voice user could indefinitely interrupt surveying and earth moving operations on a construction site or delay "clean up" operations conducted by public safety and private sector organizations in the aftermath of natural disasters. For these reasons, Trimble urges the Commission to reserve the Group B frequencies for data only operations.[15]

Consistent with this data only approach, the Commission should also permit continuous data transmissions on the Group B channels. By prohibiting voice uses on these frequencies, the Commission will substantially reduce the risk of a single licensee with high traffic from monopolizing a shared channel – thus mitigating the concerns of commenters proposing a duty cycle.[16] Moreover, imposing a rigid duty cycle is, as Toro observes, inappropriate in the case of intermittent data communications, which do not fit neatly into any easily defined pattern required under a duty cycle scheme.[17]

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[14] See Dataradio Comments at 9 (warning of the "real and potential catastrophic hazards associated with co-channel use of voice and data applications"); AWWA Comments at 4 (noting that uncoordinated voice communications on the Group B channels "could lead to serious conflicts" with data transmission applications); Comments of Hexagram, Inc., WT Docket No. 01-146; RM-9966, at 8 (filed Oct. 12, 2001) (observing that non-voice operations on the Group B channels "can suffer significantly from the sharing of frequencies with voice operations") ("Hexagram Comments").

[15] Should the Commission decide, however, that some shared use of these frequencies is necessary, Trimble believes that such use should be limited in the manner proposed by LMCC and UTC – that is, to secondary voice operations related to the licensee's use of the channel for telemetry or data. See n.11 supra.

[16] See, e.g., AES Comments at 6; Hexagram Comments at 8; Comments of Enalasys Corporation, WT Docket No. 01-146; RM-9966, at 2 (filed Oct. 12, 2001) ("Enalasys Comments").

[17] Toro Comments at 7. See also AWWA Comments at 4 ("[T]here are numerous applications currently taking place within the 450-470 MHz band that require continuous data transmissions.").

C. Motorola's Proposal To Extend Trunked Voice System PSA Protection To Mobile Data Operations Has Promise If Applied Inclusively, But Should Only Be Considered At A Later Date.

Motorola proposes that the Commission address the issue of shared voice and non-voice channel use by providing a protected service area mechanism for mobile data operations.[18] Trimble believes that Motorola's proposal has merit provided that the mobile operations it seeks to protect are broadly defined to include all existing and developing data applications. In any event, Motorola proposes significant rule changes that appear to lie outside the scope of the NPRM. Trimble believes that the implications of these changes require careful and complete consideration, and would best be examined in a Further Notice of Proposed Rule Making or in a separate rule making proceeding dedicated to the issues raised by Motorola.

III. The Commenters Exhibit Strong Support For Data Operations On The Group A and C Channels On At Least A Secondary Basis.

Recognizing the need for additional spectrum for data operations, an overwhelming majority of commenters urge the Commission to authorize non-voice operations on a secondary basis on the Group A or Group C frequencies.[19] API, for example, favors secondary data use of the Group A frequencies due to the need on the part of petroleum and natural gas companies for wireless data systems for "mission-critical communications" in conjunction with their voice communications.[20] Dataradio, Pacific Crest and the Enalasys Corporation go one step further and propose *primary* data operations on at least a portion of the Group A or Group C frequencies.[21]

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18 Motorola Comments at 3.

19 See, e.g., AES Comments at 3; AWWA Comments at 4; Toro Comments at 6.

20 API Comments at 9.

21 Dataradio Comments at 6; Pacific Crest Comments at 4; Enalasys Comments at 2.

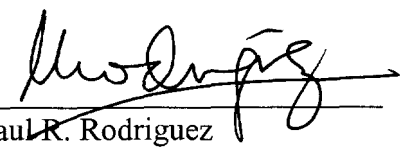
As it indicated in its comments, Trimble supports secondary data operations on both the Group A and Group C frequencies – in particular, the Group A channels, which are intended for use by the most powerful of the low power PLMR services. Although sympathetic to the proposals for primary data operations on these channels, Trimble believes that secondary operations will meet the spectrum needs of the data user community *provided* the Commission also designates the Group B channels as data only.

IV. Conclusion

For the foregoing reasons, Trimble urges the Commission to adopt a plan for the 450-470 MHz band consistent with the view expressed by a majority of commenters in support of increasing the amount of PLMR spectrum made available to the nation's data user community.

Respectfully submitted,

TRIMBLE NAVIGATION LIMITED

By: 

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