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FEDERAL COMMUNICATIONS COMMISSION
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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 to Adopt Regulations for Automatic Vehicle Monitoring Systems	)	PR Docket No. 93-61

To: The Commission

REPLY COMMENTS
OF
METRICOM, INC. AND SOUTHERN CALIFORNIA EDISON COMPANY
TO
SUPPLEMENTAL COMMENTS

Metricom, Inc. ("Metricom") and Southern California Edison Company ("SCE"), by their attorneys, pursuant to the invitation extended by the Commission in its Public Notice,[1/] hereby respectfully submit these Reply Comments in response to the Supplemental Comments which were filed in this proceeding.[2/]

1. The Supplemental Comments filed demonstrate that the proponents of wideband Location Monitoring Service ("LMS") have continued to attempt to avoid a key issue in this proceeding, namely, the extent to which Part 15 devices will cause harmful interference to wideband LMS operations. Unlike these proponents, the FCC cannot avoid this issue. As a matter of reasoned decision making pursuant to the Administrative Procedure Act, if the Commission decides to implement LMS despite the record evidence to the contrary, it must either: (i) indicate that it is not concerned

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1/ DA 94-129, released Feb. 9, 1994.

2/ The date for filing Reply Comments was extended by Order, DA 94-242, released March 18, 1994.

with how the action in this proceeding will affect Part 15 users and the Part 15 industry; or, (ii) it must adopt rules which will ensure that newly authorized wideband LMS cannot exercise preemptive rights over Part 15 devices and cause those devices to terminate operations. In either event, the Commission must clearly articulate its rationale for the decision reached.[3/]

2. As stated above, wideband LMS proponents have, for the most part, avoided the Part 15 interference issue. When these proponents have addressed the issue, they have done so in a most disingenuous manner. For example, PacTel Teletrac's discussion of this issue in Reply Comments filed last year was limited to a single, conclusory sentence that wideband LMS would not have "any appreciable adverse effect on Part 15 operators . . . ."[4/] Knowing

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[3/] See, 5 U.S.C. § 553(c). "To have any reasonable prospect of obtaining judicial affirmance of a rule, an agency must set forth the basis and purpose of the rule in a detailed statement ... in which the agency refers to the evidentiary basis for all factual predicates, explains its method of reasoning from factual predicates to the expected effects of the rule, relates the factual predicates and expected effects of the rule to each of the statutory goals or purposes the agency is required to further or to consider, responds to all major criticisms contained in the comments on its proposed rule, and explains why it has rejected at least some of the most plausible alternatives to the rule it has adopted." Citations omitted. Kenneth Culp Davis and Richard J. Pierce, Jr., Administrative Law Treatise, § 7.4 (3d. Ed. 1994) at 310-311. See, also, Greater Boston Television Corp. v. F.C.C., 444 F.2d 841, 852 (D.C. Cir.); cert. denied, 403 U.S. 923 (1970) ("[A]n agency changing its course must supply a reasoned analysis indicating that prior policies and standards are being deliberately changed, not casually ignored . . . ." Citations omitted).

[4/] Pactel Reply Comments at 45 (July 29, 1993). Pactel was equally unconcerned about Part 15 interference in its initial comments, making only the conclusory assertion that "[t]otal system failures are not likely to occur due to interference from [Part 15] users. . . ." Pactel Comments at 52 (June 29, 1993). This statement is misleading even if it were true since Section 15.5(b) would give PacTel the right to demand cessation of operation of a Part 15 device that interferes with reception from a single LMS (continued...)

that honest debate on this crucial issue would demonstrate that the Part 15 industry's concern is legitimate, wideband LMS proponents have failed to provide definitive engineering evidence to address this issue. Indeed, last year PacTel flatly refused to cooperate with the Telecommunications Industry Association ("TIA") in an engineering test program designed to determine the circumstances under which Part 15 devices would interfere with LMS.[5/]

3. In the most recent round of Comments, however, a new technical study submitted by wideband LMS advocate MobileVision[6/] confirms that the concerns articulated by the Part 15 industry are real -- and serious. With the addition of the MobileVision technical study, the record has never been clearer. The interference problem from Part 15 devices to LMS operations, if the FCC establishes LMS, could force tens of thousands of individuals and businesses to discontinue operating Part 15 devices in the 902-928 MHz band. The multi-billion dollar investment made by industry and consumers in cordless phones, energy distribution and monitoring equipment,[7/] security systems, and scores of other Part 15 devices,

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[4/] (...continued)
transmitter; it does not limit PacTel's right to demand a shutdown only of those Part 15 devices that cause "total system failures".

[5/] See, e.g., Comments of TIA Mobile and Personal Communications Consumer Radio Section (March 15, 1994) at ¶ 13.

[6/] G.K. Smith, "Interf. Analysis of Part 15 Devices and LMS Wideband Systems" at 10, att. as Annex 2 to Further Comments of MobileVision (March 15, 1994).

[7/] SCE explained in its Reply Comments, filed July 29, 1993, that with the encouragement of the Public Utilities Commission of the State of California, it has invested about $30 million of ratepayers' money on research and development of a Part 15 communications network, operating in the 902-928 MHz band, to automate its distribution system and remotely read its customers'
(continued...)

as well as the promise of exciting applications for low cost, flexible and reliable wireless communications[8/] could be destroyed.

DISCUSSION

4. MobileVision's 42-page technical analysis illustrates that Part 15 devices will interfere on a widespread basis with wideband LMS systems.[9/] The MobileVision study shows that a Part 15 device operating indoors with just 0.1 watt of power -- such as a cordless phone -- could cause harmful interference to an LMS fixed site receiver unless the cordless phone was more than 1.62 miles from the LMS receiver.[10/]

5. The MobileVision technical study also shows that the risk of interference to LMS by Part 15 equipment operating outdoors is even greater. For example, a Part 15 transmitter operating outdoors with one watt of power may have to be at least 11.48 miles from an LMS fixed site receiver in order to avoid causing interference to that receiver.[11/] A Part 15 device operating outdoors at 0.1 watt would have to be at least 6.46 miles from a fixed LMS

[7/] (...continued)
utility meters. SCE estimates that this system will result in total annual ratepayer savings of as much as $40 million.

[8/] See, Comments of Metricom, March 15, 1994 at Attachment A for a list of applications.

[9/] This conclusion is not dissimilar to Metricom's analysis at Appendix A of its June 2, 1993, Comments filed in this proceeding. By contrast, the record contains no engineering study which concludes that interference from Part 15 devices to wideband LMS will be insubstantial.

[10/] G.K. Smith, "Interf. Analysis of Part 15 Devices and LMS Wideband Systems" at 10, att. as Annex 2 to Further Comments of MobileVision (March 15, 1994).

[11/] Id. at 22.

receiver in order to avoid interference.[12] And, a one-watt Part 15 transmitter operating outdoors would have to be more than 0.93 miles from a mobile LMS receiver communicating with an LMS base station six miles away to avoid interfering with that LMS mobile receiver.[13] With more than 2 million 902-928 MHz Part 15 devices already operating, it is readily apparent that interference from Part 15 to wideband LMS will result in widespread and serious problems.[14] Moreover, the need for more receivers for an expanded AVM service, especially for tracking people, moves the LMS receivers closer to the sources of Part 15 interference.

6. MobileVision and PacTel have presented three proposals in their March 15, 1994, Comments which they claim will minimize the number of forced shutdowns of Part 15 devices because of harmful interference. None of these proposals is truly effective and two of them would present the FCC with an unprecedented enforcement problem.

7. First, MobileVision and Pactel tell the Commission that they are willing to compromise by confining their wideband LMS operations to a discrete portion of the 902-928 MHz band. This,

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[12] Id.

[13] Id. at 26.

[14] NTIA recently estimated that more than two million Part 15 devices presently operate in the 902-928 MHz band. See, U.S. Dept. of Commerce, "Prelim. Spectrum Realloc. Report" at 3-12 (NTIA Special Pub. 94-27, Feb. 1994). Moreover, sales of Part 15 cordless phones are booming. Approximately, 4,000,000 cordless phones were sold during 1992 -- 9,000,000 were sold in 1993. (See Statement of Reed Hundt, Chairman, FCC, before the Committee on Commerce, Science and Transportation, U.S. Senate at 6 (February 23, 1994). Due to increased range and reliability, sales of new Part 15 spread spectrum cordless phones are expected to surpass the current generation of cordless phones.

they say, would leave Part 15 users free to operate on the remaining part of the band where they would be immune from forced shutdown under Section 15.5(b).[15] As explained in Metricom's March 15, Comments, such a proposal does nothing to help owners of existing Part 15 devices from being forced to terminate operations. Millions of such devices currently occupy the entire 902-928 MHz band,[16] and very few of them can be modified to avoid operating on that portion of the band that would be occupied by wideband LMS system. Moreover, the proposal constitutes a de facto reallocation of the band for exclusive use by wideband LMS and away from the Part 15 industry. Forcing all newly manufactured Part 15 transmitters to operate in a band only about half the size of the band in which Part 15 devices presently operate will ultimately result in increased interference among Part 15 devices.[17] Furthermore, such a proposal is antithetical to the notion of Part 15 spread spectrum operations.[18]

8. MobileVision's second proposal, that wideband LMS licensees "defray . . . reasonable costs of migration" for tens of thousands of existing Part 15 users who could be forced to

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[15] MobileVision has proposed to let Part 15 devices operate on 910-920 MHz. See Further Comments of MobileVision (March 15, 1994) at p.3. By contrast, Pactel has proposed to let these devices operate between 912-928 MHz. PacTel Comments (March 15, 1994) at p.10.

[16] SCE alone currently has approximately 4,500 Part 15 devices in operation in its system. SCE expects to install more than 30,000 Part 15 devices by 1996 throughout its 50,000 square mile service area.

[17] March 15, 1994, Comments of Metricom at ¶¶ 20-22 ; "MobileVision's Interf. Analysis of Part 15 Devices", supra, at 37-38.

[18] See, Comments of Metricom (March 15, 1994) at ¶ 20.

discontinue operating their equipment pursuant to Section 15.5(b), is totally beyond the scope of this proceeding.[19/] Furthermore, this proposal does not ameliorate the substantial hardship that could befall users and manufacturers of Part 15 equipment. Enforcing this type of rule would present the FCC with an administrative nightmare because the agency almost certainly would be called upon to decide whether individual compensation offers by wideband LMS licensees to potentially thousands of Part 15 users are "reasonable". In addition, while a rule of this sort would result in compensation for existing Part 15 owners whose equipment is confiscated, it does nothing to compensate numerous business and consumer users of Part 15 devices for losses suffered as a result of their equipment becoming less useful. Neither does the proposal do anything to compensate Part 15 manufacturers whose businesses could be seriously harmed.

9. Finally, Pactel suggests adoption of a new definition for harmful interference.[20/] Harmful interference, as it relates to Part 15 devices, is currently defined at Section 15.3(m). Although

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[19/] Removal of Part 15 operations from the band is not a consideration in this proceeding. See, Erratum, DA 93-516, released May 5, 1993, ¶ 3 ("Commenters should offer potential solutions short of removing Part 15 . . . from the band." (Emphasis added)).

[20/] The rule proposed by Pactel would read as follows:

> "A Part 15 device will be considered a source of harmful interference if the signal level from that device exceeds the average interference and noise floor at an LMS receiver by more than 10 dB for more than 20% of the time over any 60 second period (10% if the signal exceeds the 10 dB limit at more than one LMS receiver)."

Supplemental Comments of Pactel at 10 (March 15, 1994).

PacTel's proposed revised definition might exempt some Part 15 devices from mandatory shutdown, it does nothing to prevent mandatory shutdown of numerous other devices that are currently operating pursuant to Part 15. Moreover, it would be extremely difficult to enforce the revised definition as proposed by PacTel. For example, the agency undoubtedly would be asked to decide in numerous cases whether a particular Part 15 device must cease operation for exceeding the maximum allowable signal strength received at an LMS receiver based on conflicting signal strength data presented by the wideband LMS licensee and the Part 15 operator.

10. The last issue addressed in these Reply Comments involves MobileVision's recommendation that the Commission conduct technical meetings with appropriate LMS representatives to develop rules for LMS operations. MobileVision's recommendation fails to include Part 15 representatives in these meetings until after the parameters of LMS operations are established.[21/] This is the wrong approach. This approach of dismissing Part 15 concerns is consistent with LMS wideband proponents' conduct in this proceeding, despite the fact that MobileVision's own technical study indicates that Part 15 devices will cause interference to LMS operations. Clearly, the first issue which must be examined, by means of technical meetings or otherwise, is whether Part 15 devices and LMS can coexist. Once the Commission makes a determination on the coexistence issue, if LMS operations are to be allowed, then the type of technical meetings suggested by

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[21/] Further Comments of MobileVision, March 15, 1994, pp. 33-34.

MobileVision would be appropriate provided Part 15 interests are represented at those meetings from the outset.

WHEREFORE, the premises considered, Metricom and SCE urge the Commission to take further action in this proceeding in accordance with the views expressed in Metricom's and Southern California Edison's Comments and Reply Comments submitted in this proceeding.

Respectfully submitted,

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