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JUL 29 1993

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

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Amendment of Part 90 of the) PR Docket No. 93-61
Commission's Rules to Adopt) RM-8013
Regulations for Automatic)
Vehicle Monitoring Systems)

REPLY COMMENTS OF
AMERICAN TELEPHONE AND TELEGRAPH COMPANY

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July 29, 1993

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SUMMARY

The NPRM proposes to replace the present interim rules with permanent rules authorizing Location and Monitoring Services ("LMS") in the 902-928 MHz band. Permanent rules authorizing a portion of that spectrum for local area LMS systems, with the limits on antenna height and power proposed in AT&T's Comments, should be adopted. With those limitations, local area systems would be confined to small geographical areas and would meet the statutory tests for spectrum allocation.

On the other hand, wideband pulse-ranging ("wide area") LMS systems should not be authorized because they do not meet the statutory criteria for spectrum allocation: they are spectrally inefficient, do not permit sharing between different types of users, do not foster competition, and do not serve the largest number of users.

The overwhelming bulk of the commenters agreed that the wide area systems are deficient in these respects. Because of these deficiencies, AT&T proposed that the interim authorization be revoked for wide area systems. Some commenters proposed, however, that the interim rules be maintained or that further technical effort be made under Commission auspices to develop some means for co-existence of the wide area systems and other users. These proposals should be rejected because viable wide area systems have not been developed since the interim rules were issued in 1974.

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REPLY COMMENTS

American Telephone and Telegraph Company ("AT&T") respectfully submits the following reply comments in response to the Notice of Proposed Rulemaking ("NPRM") FCC 93-141, released April 9, 1993.

The NPRM proposes to replace the present interim rules with permanent rules authorizing the Location and Monitoring Service ("LMS") to operate in the 902-928 MHz band, with separate segments of that band assigned to wideband pulse-ranging systems (between 2 and 8 MHz) and to narrowband (less than 2 MHz) systems. The Comments¹ overwhelmingly demonstrate that the wideband pulse-ranging ("wide area") LMS systems do not qualify for an allocation of spectrum. On the other hand, there was general agreement

¹ Appendix A lists 75 commenting parties.

that the local area systems, appropriately limited in power and range, qualify for permanent spectrum allocation.²

I. WIDE AREA SYSTEMS SHOULD NOT BE AUTHORIZED

The claim by a few proponents of wide area systems, principally Teletrac³, that such systems merit an allocation of spectrum is not supportable because these systems do not meet the statutory criteria for spectrum allocation.⁴ Specifically, they are spectrally inefficient, do not permit sharing between different types of users, do

technology which is actually in use, and makes much more efficient use of spectrum.⁵ Additional spectrally efficient alternatives to Teletrac's wide area technology for communicating vehicle location were identified in the comments: cellular, FM subcarrier, Specialized Mobile Radio, satellite, narrowband PCS.⁶ The wide area system interests made no attempt to demonstrate spectrum efficiency.

In addition, wide area systems cannot share the 902-928 MHz band with other authorized users. The Commission recognized that wide area LMS systems cannot

~~operate in the same spectrum as narrowband (i.e. less than~~

area systems cannot share spectrum with them.⁸ Finally, many manufacturers of Part 15 devices agreed that the wide area systems cannot share spectrum with those devices.

AT&T and several commenters pointed out that Teletrac's own data established that its wide area system cannot operate reliably in the presence of Part 15 devices.⁹ As explained in Appendix A to AT&T's Comments, the data contained in Teletrac's Petition for Rulemaking shows that the Teletrac system cannot provide an accurate vehicle location in the presence of even a moderate number of Part 15 devices operating at fairly low power.

That data was submitted to prove that Teletrac's system could not operate in the presence of another LMS system and thus required exclusive use of spectrum.

where the threat of interference from Part 15 devices might be less because of physical separation, but without any showing that interference will not occur when the devices are in proximity to the wide area service equipment. For example, Teletrac cites the obvious that there will not be interference when the Part 15 devices are not used near LMS receivers or are used in buildings where insulating walls will reduce the interfering signal. This is no answer to the many other times the Part 15 devices will be used near LMS receivers or indoors where the building material provides little insulation from the interfering signal.

Teletrac's claim that Part 15 devices used at ground level will not cause interference because the LMS receivers are on roofs or towers is illogical. LMS receivers pick up signals from vehicles located at ground level and thus will pick up interfering signals from Part 15 devices at ground level. Furthermore, Teletrac ignores that some Part 15 devices will be used on upper floors of high-rise buildings at similar heights to LMS receivers. Teletrac also errs in claiming that Part 15 devices will saturate the band and interfere with each other before they impact the wide area system. The frequency hopping Part 15 devices authorized in the 902-928 MHz band are designed to operate well despite the presence of similar devices nearby. A wide area system will not be able to operate in the

presence of these devices long before, if ever, there are enough Part 15 devices to harm each other.¹⁰

Wide area systems do not meet the statutory test of furthering competition and serving the maximum number of users.¹¹ Teletrac itself insists on exclusive use of 8 MHz of spectrum. One appendix to Teletrac's comments is a technical paper establishing that the Teletrac system cannot share spectrum with another LMS system.¹² Another appendix is an economics paper maintaining that multiple licensees in the same spectrum will cause wasteful duplication of

¹⁰ Teletrac's efforts to suppress interfering Part 15 devices, referred to by several commenters, (Itron (p. 5); Knogo (p. 11); Metricom (p. 19)), belie its present contention. MobileVision (which claims to be the only one aside from Teletrac to have constructed wide area systems in the United States) says (p. 24) that

facilities and slow technological progress. Although the Commission asked (NPRM, ¶ 21) if there is or will be a way to license wide area systems on a competitive basis, the record shows that such systems do not permit competition.

It is thus clear that the wide area systems do not meet the statutory tests for allocation of spectrum. No public interest would be served by exclusive grants to such systems in a wide segment of a band which is already occupied by certain government users, ISM devices, amateur operators and an increasing number of Part 15 devices providing many beneficial services to large numbers of people¹³ and developed at substantial expense for use in the 902-928 MHz band.¹⁴

Although there was overwhelming agreement that the wide area systems do not merit allocation of spectrum, the commenters did not agree on whether the Commission should eliminate the present interim allocation. AT&T and a few

¹³ E.g., AICC (getting help to people in danger or medical distress); Sensormatic (reduces theft); CARB (system to permit on-the-road monitoring of vehicle emissions will help state meet clean air requirements). Amateur use also serves important public interests, e.g., Ritter (providing information to National Weather Service on severe windstorms).

¹⁴ Commenters explained that this development effort was based on Commission encouragement and an implicit understanding with the Commission that they could use the 902-928 MHz band. AICC (p. 8); Cobra (p. 2); DAC (p. 6); EIA/CEG (p. 7); Ericsson, (p. 7); Metricom (pp. 15-16); Recoton (p. 4); Sensormatic (p. 16); TIA (p. 4); Uniden (p. 4); UTC (p. 5).

others urged the Commission to terminate the interim authorization.¹⁵ This decision is called for now because the wide area system operators have not succeeded in developing a spectrally efficient system which can share the band with other users, although they have had since 1974 when the interim rules were issued to do so. The suggestion of some commenters to allow the interim rules to continue¹⁶ should be rejected because it would allow Teletrac and

increase any transition problems when the interim authorization for the wide area systems is eliminated.²⁰ Although AT&T would be willing to participate in an industry technical effort under Commission auspices to attempt a co-existence solution, AT&T believes that enough information already exists and that the public interest requires terminating the interim rules and adopting permanent rules that do not authorize wide area systems.²¹

II. LOCAL AREA SYSTEMS SHOULD BE AUTHORIZED UNDER THE PROPOSED RULES MODIFIED IN ACCORDANCE WITH AT&T'S COMMENTS

In contrast to the opposition to wide area systems such as Teletrac's, several users²² joined AT&T and other vendors in supporting allocation of spectrum to local area systems. AT&T's approach of confining LMS systems to a small geographic area by means of limiting the antenna height and power of the base stations was also adopted by

AT&T's proposed limits should be adopted. Anything further would increase the potential for interference over too wide an area, thus impairing the ability of others in the community to reuse the spectrum. AT&T is particularly troubled by AMTECH's proposal that local area highway beacons, as opposed to the base stations, be permitted 100 Watts. That proposal envisions transmitters on poles outside the roadway shoulders that are able to monitor and communicate with vehicles on a multi-lane highway.²⁴ One hundred Watt transmitters at the same height as 30 Watt transmitters would cause interference preventing frequency reuse by low powered systems over about twice as much area.

Finally, the proposals of local area system providers and their customers²⁵ to give less spectrum to wide area systems so that more can be given to local area systems is moot because the wide area systems should not be allocated any spectrum. AT&T's Comments proposed assigning to local area systems the two 8 MHz segments that were to be allocated to the Teletrac-type systems and leaving the 6 MHz

(footnote continued from previous page)

an antenna height of 10 meters but urged a field strength limit of 1mV/m at a distance of 3000 meters, which permits interference over a wider area.

²⁴ See AMTECH's Comments, p. 18 and n.34.

²⁵ AMTECH; AAR; AIM; ATA; TI/MFS; IBTTA.

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center clear of LMS, as it is now, satisfying Part 15 interests who designed systems on the basis that LMS would not operate there.²⁶ That proposal should be adopted.

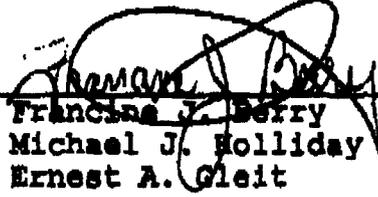
CONCLUSION

For the reasons discussed above and in AT&T's Comments, the rules should not authorize wide area systems in the 902-928 MHz band. Local area systems should be authorized pursuant to the rules proposed in the NPRM modified in accordance with AT&T's Comments.

Respectfully submitted,

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²⁶ Ericsson (pp. 6-8); Norand (pp. 9-10) joined AT&T in urging that the center frequencies be kept clear of LMS.

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Alarm Device Manufacturing Company - ADEMCO
Alarm Industry Communications Committee - AICC
American President Companies, Ltd. - APC
American Radio Relay League - ARRL
American Telephone and Telegraph Company - AT&T
American Trucking Association - ATA
AMTECH Corporation - AMTECH
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Lockheed Information Management Services Company - Lockheed
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