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August 11, 1993

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BY HAND

William F. Caton, Acting Secretary
Federal Communications Commission
Room 222
1919 M Street, N.W.
Washington, D.C. 20554

Re: ET Docket No. 93-59: Ex Parte Submission

Dear Mr. Caton:

On behalf of our client, the Consumer Electronics Group of the Electronic Industries Association ("EIA/CEG"), we wish to transmit for inclusion in the record of the above-referenced proceeding two pleadings recently submitted in a related docket. In PR Docket No. 93-61, EIA/CEG filed comments (June 29, 1993) and reply comments (July 29, 1993) in opposition to the Commission's proposal to expand Part 90 usage of the 902-928 MHz frequency band for location, identification, and messaging services. The central themes of those pleadings involved the numerous benefits which are resulting from past Commission actions to encourage the development of Part 15 devices for operation in the 902-928 MHz band and the jeopardy in which those benefits could be placed by adoption of the Commission's proposal for expanded private radio operations in the same band.

In ET Docket No. 93-59, the Commission has, by Notice of Inquiry, solicited comments on the deployment of wind profiler radar systems within a portion of the 902-928 MHz band. EIA/CEG believes that some of the same concerns it has articulated in PR Docket No. 93-61 may be germane to the Commission's consideration of the inquiry portion of ET Docket No. 93-59. Accordingly, we ask that the two enclosed pleadings be considered before any rulemaking proposal is formulated regarding use of wind profiler radar systems anywhere in the 902-928 MHz band. And we wish to express our support for the view, expressed by several parties in this proceeding, that the Commission should defer any further consideration of wind profiler radar systems at 900 MHz frequencies until it has fully evaluated the record compiled in response to the Notice of Proposed Rulemaking in PR Docket No. 93-61.

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Squire, Sanders & Dempsey

William F. Caton, Acting Secretary
Federal Communications Commission
August 11, 1993
Page 2

This original letter plus attachments and one copy of each are being submitted for the record of ET Docket No. 93-59 in accordance with the rules governing permissible ex parte submissions. An additional copy of the package will be tendered by our messenger so that we may have a "stamped copy" for our files.

Thank you for your assistance. Please let me know if you have any questions.

Sincerely,


James L. Casserly

Enclosures

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

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JUN 29 1993

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

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

**COMMENTS OF THE CONSUMER ELECTRONICS GROUP
OF THE ELECTRONIC INDUSTRIES ASSOCIATION**

The Consumer Electronics Group of the Electronic Industries Association ("EIA/CEG") hereby responds to the Notice of Proposed Rulemaking ("Notice") concerning the establishment of Part 90 rules for the Location and Monitoring Service ("LMS").¹ EIA/CEG has substantial reservations about the Commission's proposal, which appears to jeopardize the innovation and consumer benefits resulting from recent amendments to Part 15. Unless these concerns are satisfactorily addressed, EIA/CEG strongly urges that the Part 90 rules not be amended as proposed.

I. INTRODUCTION OF EIA/CEG AND STATEMENT OF INTEREST

EIA/CEG represents the consumer electronics industry, an industry that provides the American public with televisions, radios, videocassette recorders and camcorders, compact disc players, and a wide variety of other products. Our membership includes most major consumer electronics manufacturers, as well as many smaller companies that design, produce, import, distribute, sell, and service electronics products in the United States.

On behalf of our members, we participate in numerous FCC proceedings, involving such matters as digital audio radio, advanced television, closed-captioning and related data services, cable-consumer electronics compatibility, and a variety of other subjects.

^{1/} 8 FCC Rcd. 2849 (1993)("Notice").

We also participate in the legislative process, organize trade shows, disseminate information to consumers, and establish industry standards (under the auspices of the American National Standards Institute). In all these endeavors, our mission is to promote competition, innovation, and interoperability of consumer products, thereby bringing quality, choice, and value to the consumer.

EIA/CEG has an intense interest in this proceeding. The proposed change in Part 90 rules may have a dramatic effect on the operation of Part 15 devices in the 902-928 MHz frequency band. EIA/CEG was an active participant in the proceeding in which the Commission encouraged the development of Part 15 devices in this band, and -- in reliance upon the Commission's prior actions -- EIA/CEG's members have developed and are marketing to the public substantial quantities of desirable products that operate successfully within the present framework of the rules. As a result, EIA/CEG must strongly oppose any change in the rules that adversely affects the public interest by limiting the ability of manufacturers to develop and to sell such devices, or by limiting the ability of the American public to use such products.

II. DISCUSSION

A. The Present Rules Governing Use of 902-928 MHz

The Commission's rules currently authorize several different uses of the 902-928 MHz band. The primary assignment of the band is for Federal Government Radiolocation, Fixed and Mobile Services.² The same frequency band is also authorized for use by Industrial, Scientific, and Medical ("ISM") equipment.³ On a secondary basis, portions of the

^{2/} 47 C.F.R. § 2.106 (1992).

^{3/} 47 C.F.R. §§ 2.106, 18.301 (1992). Part 18 devices operating in this band are allowed "unlimited radiated energy." 47 C.F.R. 305(a) (1992). Part 18 devices include ultrasonic humidifiers, microwave ovens, and industrial heating equipment, to name but a few examples. See 47 C.F.R. §§ 2.106 footnote US 215, 18.107(d) & (g) (1992).

902-928 MHz band have also been authorized for use for Automatic Vehicle Monitoring ("AVM") systems.⁴ Amateur radio may also use the same frequencies.⁵

In addition, the Commission has affirmatively encouraged the development and use of Part 15 devices in the 902-928 MHz frequency band. Just four years ago, the Commission decided to "authorize the operation of Part 15 devices on a number of new frequency bands, namely the frequency bands allocated to [ISM] devices," specifically including 902-928 MHz.⁶ At that time, the Commission concluded that "there are many possible applications for Part 15 devices within these ISM bands" and that "manufacturers, if given the opportunity to use the ISM frequencies, will develop many new and practical uses of Part 15 devices."⁷

In a separate but contemporaneous proceeding, the Commission developed more flexible rules to promote the operation of low-power, non-licensed spread spectrum systems operating at 902-928 MHz, among other frequencies. This action was specifically intended to "significantly increase the potential range of permissible designs for Part 15 spread spectrum systems and thereby broaden the opportunities for development and use of this important new technology."⁸

These actions have produced, and are continuing to produce, the intended results. As will be discussed below, manufacturers of Part 15 devices have responded to the opportunities created by the Commission's actions by developing a wide variety of useful and

^{4/} 47 C.F.R. §§ 2.106 footnote US 218 (but must not cause interference to government stations and must accept interference from government stations and ISM devices), 90.103(d)(903-904, 904-912, 918-926, and 926-927 MHz may be used for AVM, but only 904-912 and 918-926 MHz may be used to provide service to others) (1992).

^{5/} 47 C.F.R. §§ 2.106 footnote US 275 (secondary to U.S. Government and AVM; also must accept interference from ISM) (1992).

^{6/} Revision of Part 15 of the Rules Regarding the Operation of Radio Frequency Devices Without an Individual License ("Part 15 Rewrite"), 4 FCC Rcd. 3493, 3502 (¶ 55) (1989)(subsequent history omitted); see 47 C.F.R. § 15.249 (1992).

^{7/} Part 15 Rewrite Order at 3502 (¶ 58).

^{8/} Amendment of Parts 2 and 15 of the Rules with Respect to the Operation of Spread Spectrum Systems, 5 FCC Rcd. 4123 (¶)(1990); see 47 C.F.R. § 15.247(1990).

innovative devices that are bringing considerable value to the American public. The present rules, which were carefully crafted by the Commission just a few short years ago and which are already beginning to produce substantial benefits, should not now be changed absent compelling justification.

B. Part 15 Equipment Manufacturers' Response
to the Opportunities Created By the Commission

Manufacturers have spent massive amounts of money -- as well as substantial personnel resources -- to develop products that make use of the opportunity the Commission created several years ago by opening the 902-928 MHz band for Part 15 products. Already, several new kinds of products have reached the marketplace and have received an enthusiastic welcome from the American public.

Better cordless phones, for example, which respond to the public's desire for better security and longer operating distances, are just becoming available. Wireless video products now permit a single VCR to serve multiple televisions in a single household, wireless audio products facilitate connection of speakers throughout the home, and wireless headphones now permit personal, but untethered, enjoyment of audio sources. Infrared-radio frequency converter-repeaters allow consumers to control electronics products, such as video and audio players, from other rooms. Intercoms, wireless microphones, and baby monitors have all been improved (with better range and security) as a result of the opportunity to use higher frequencies and, with spread spectrum, higher power as well. Home and car security products also take advantage of the opportunities created by the rules for Part 15 operation at 902-928 MHz.⁹

EIA/CEG's focus is primarily on consumer products, but the range of Part 15 offerings for the business environment has likewise burgeoned. Wireless bar code readers, antishoplifting devices, wireless local area networks, and remote meter reading devices are

^{9/} Many of these products help to promote the safety of life and property. These uses are entitled to special consideration in spectrum allocation decisions. Protests to Commission Order No. 19; Frequency Allocations to Services in the Frequency Bands from 30,000 to 300,000 KC, 39 FCC 1, 14 (1939).

among the many new products that have been and are being developed for 902-928 MHz operation.

EIA/CEG firmly believes that the products available to date represent a small fraction of the innovative devices that will soon be available for use in the 902-928 MHz band, assuming that the rules are not precipitously changed. Manufacturers are naturally reluctant to give their competitors advance knowledge of their product plans, but design and development work is apparently far along for many new products that use these frequencies.

These products can make Americans more efficient at work and enhance the quality of life at home as well. The asserted virtues of a new service are not reason enough to permit investments in these products to be destroyed.

C. The Proposed Changes in Existing Rules for 902-928 MHz

The Commission now proposes to change the Part 90 rules in a manner which could substantially alter the current environment for operation in the 902-928 MHz band. The proposals in the Notice would transform the authorization for AVM services by making several major changes in the existing rules.

First, the range of potential customers would be expanded. Today, AVM can serve businesses and local governments, but, under the Notice, individuals and the federal government could also be end users.¹⁰ Second, the number and range of potential providers would be expanded. Today, AVM service generally must be provided only on a cost-sharing basis, but the proposals in the Notice would allow private carriers to provide AVM services on a for-profit basis.¹¹ Third, the scope of potential services would be broadened. Today, AVM systems are limited to transmitting information regarding vehicles, but the Notice would allow AVM to be used to transmit information regarding the location of any object, animate or inanimate, as well as to "transmit and receive status and instructional messages related to the

^{10/} Notice at ¶ 7.

^{11/} Id. at ¶ 8. The Commission recognizes that "expansion of permissible use and eligibility may . . . have its drawbacks," such as by causing "rapid congestion of available spectrum." Id.

units involved."¹² Fourth, the Notice would replace interim spectrum rules with permanent rules and allow private radio operations throughout the 902-928 MHz band.¹³

In sum, these changes would vastly expand Part 90 operations in the 902-928 MHz band, allowing new providers, new customers, and a variety of new services. To reflect the changed nature of the service, the Commission proposes to rename AVM as the Location and Monitoring Service, or LMS. It is inevitable that these changes would cause considerably greater deployment of Part 90 devices operating in this band, thereby increasing the likelihood of interference caused to and received from other operations in the band.

D. The Need To Protect Existing Uses

The Notice recognizes that the multiplicity of uses of the 902-928 MHz bands creates the potential for interference.¹⁴ It specifically mentions that interference from Part 15 devices is "likely [to] be a continual concern as new consumer-oriented Part 15 devices, including the new spread spectrum cordless telephones, which can operate with up to one watt, are introduced."¹⁵ The Notice asks whether it is "possible to establish reliable LMS systems considering the number and diversity of other users of this band."¹⁶

As originally released, the Notice followed the last inquiry with the question whether Part 15 and amateur operations should be removed from the band to make way for LMS systems.¹⁷ A later erratum rephrased the question to seek suggestions to limit interference, "short of" removing Part 15 and amateur operations from the band.¹⁸

^{12/} Id. at ¶ 9.

^{13/} See id. at ¶ 4. AVM operations are currently limited to narrowband systems at 903-904 and 926-927 MHz and broadband systems at 904-912 and 918-926 MHz. Id. at ¶ 10.

^{14/} Notice at ¶¶ 23-24.

^{15/} Notice at ¶ 24 (footnote omitted).

^{16/} Id.

^{17/} Id.

^{18/} Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, PR Docket No. 93-61, DA 93-516 (released May 5, 1993).

EIA/CEG welcomes the significant change in thrust reflected by the erratum, but we remain concerned that the Notice portends injury to Part 15 manufacturers, vendors, and users. Although we are well aware that Part 15 devices operating under the existing rules have a duty not to cause harmful interference to authorized radio services and must accept whatever interference is caused by such services,¹⁹ we also believe that the Commission is duty-bound to take a broad view of the public interest in making decisions concerning possible changes in existing spectrum rules.²⁰ Like other federal agencies, the Commission cannot radically alter one course in favor of another without adequate justification.²¹

Scores of manufacturers, thousands of retailers, and millions of consumers have made investments in Part 15 technologies and products in reliance on existing rules. Accordingly, the burden of proof must be placed on the proponents of the expanded Part 90 use to show that they can coexist peacefully with Part 15 devices and other services -- including government, ISM, and amateur radio -- operating in the 902-928 MHz band. To date, however, LMS proponents have provided no serious analysis of the consequences that expanded Part 90 uses would entail for other devices, especially Part 15 devices, operating in the band. This is truly unfortunate.

E. A Proposed Course of Action

The proponents of LMS appear to have neglected to consider Part 15 devices in the earlier phases of this proceeding. We hope that the foregoing comments -- and those of other parties interested in protecting opportunities for Part 15 innovation -- will help to dissuade the Commission from following a precipitous course in this proceeding. Surely there

^{19/} 47 C.F.R. § 15.5(b) (1992)

^{20/} See generally WOKO, Inc. v. FCC, 153 F.2d 623, 628 (D.C. Cir. 1946)(touchstone for FCC action must be "public interest, convenience, and necessity"), rev'd on other grounds, 329 U.S. 223 (1946); Tandem Productions, Inc. v. Columbia Broadcast System, 609 F.2d 355, 362 (9th Cir. 1979)(interests of public are paramount); National Ass'n of Regulatory Utility Comm'rs v. FCC, 525 F.2d 630, 636 (D.C. Cir.), cert. denied, 425 U.S. 992 (1976).

^{21/} See Motor Vehicle Manufacturers Ass'n v. State Farm, 463 U.S. 29, 42 (1983); Great Boston Television Corp. v. FCC, 444 F.2d 841, 852 (1970).

needs to be a careful analysis of the many services and products that already operate in this band and of the effects that could result from the proposed expansion of Part 90 operations in these frequencies.

A variety of mechanisms are available to ensure that interference concerns are fully explored. A Further Notice of Proposed Rulemaking might be considered. It may be that the Commission's Laboratories, within the Office of Engineering and Technology, could help to conduct necessary interference testing, or to evaluate interference tests provided by LMS proponents. Alternatively, the Commission may wish to consider organizing an inter-industry dialogue of one form or another.²² In no event should the Commission proceed with adoption of new rules before these interference issues are fully investigated.

^{22/} EIA/CEG is not advocating the establishment of an advisory committee or the use of negotiated rulemaking procedures at this time. Rather, we merely suggest that the Commission may wish to convene a meeting of all interested parties to promote mutual awareness and understanding and to explore alternative approaches to the resolution of potentially difficult technical issues.

III. CONCLUSION

For the reasons given above, EIA/CEG believes the Commission should not adopt the proposals set forth in the Notice unless issues of interference have been fully explored and resolved. If technical analysis confirms that the proposed LMS operations would adversely affect existing Part 15 products or constrain future Part 15 innovation and operation in the 902-928 MHz band, or would adversely affect Government, ISM, or amateur radio operations in the band, then the proposal in the Notice should be withdrawn.

Respectfully Submitted,

**CONSUMER ELECTRONICS GROUP
ELECTRONIC INDUSTRIES ASSOCIATION**

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June 29, 1993

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JUL 29 1993

Before the FEDERAL COMMUNICATIONS COMMISSION
FEDERAL COMMUNICATIONS COMMISSION OFFICE OF THE SECRETARY
Washington, D.C. 20554

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

**REPLY COMMENTS OF THE CONSUMER ELECTRONICS GROUP
OF THE ELECTRONIC INDUSTRIES ASSOCIATION**

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July 29, 1993

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SUMMARY OF REPLY COMMENTS

The Consumer Electronics Group of the Electronic Industries Association ("EIA/CEG") has reviewed the comments submitted in response to the Commission's Notice of Proposed Rulemaking ("Notice") and believes they demonstrate that adoption of the proposed Part 90 rules for the Location and Monitoring Service ("LMS") would cause serious injury to manufacturers and retailers of numerous Part 15 products operating at 902-928 MHz and to the many organizations and individuals that rely on these products. The Commission should not imperil the many benefits which have been and continue to be produced as a result of the Commission's affirmative, long-standing encouragement to developers of Part 15 products.

The first-round comments confirm that innovation is flourishing as a result of the Commission's decision to expand opportunities for Part 15 devices to operate in the 902-928 MHz frequency band. The Commission has steadfastly sought to encourage development of Part 15 products for use in this band, and many companies have responded to the Commission's actions by developing a wide variety of innovative products that are winning wide acceptance in the business and consumer markets. In direct response to the opportunities created by the Commission, numerous organizations have invested heavily in research and development for 900 MHz Part 15 products. Sales figures confirm that this confidence in the growth of 900 MHz Part 15 products is well-founded.

The initial responses to the Notice strengthen EIA/CEG's concerns about the danger that adoption of the proposed Part 90 amendments could create intolerable interference problems. The record provides abundant evidence that expanded private radio use of the 902-928 MHz band would lead to interference that could undermine opportunities for Part 15 innovation and impede literally millions of consumers from using

devices they have already purchased. Such a development most assuredly would not serve the public interest.

Frequency management is among the Commission's most fundamental responsibilities. The Commission does not ordinarily authorize new or expanded uses of a frequency band when it knows that the likely result will be interference, and it should not depart from its past practice in this instance.

No party in this proceeding has demonstrated a justification for curtailing opportunities for Part 15 products to operate in the 900 MHz band. Indeed, the Commission has already made an affirmative determination that Part 15 innovation in this band is in the public interest, and the marketplace response to the Commission's encouragement has fully justified the Commission's expectations. The record provides no foundation upon which the Commission could at this point radically reverse its course. Moreover, even if future products could properly be limited, curtailing the use of existing 900 MHz Part 15 products would present insurmountable obstacles.

Responses to the Notice have also called into question the need for expanding Part 90 operations in the 902-928 MHz band. There appear to be other ways in which vehicle identification and location capabilities can be provided, without causing the kinds of interference problems that are inherent in the present proposal. A variety of parties have identified other frequency bands that might be used for LMS-type services, as well as other existing services and technologies that can fulfill the same needs.

The uncertainty created by the pendency of the proposals in the Notice is already causing adverse effects in the Part 15 marketplace. Prompt action is needed to eliminate this uncertainty and to restore confidence that the Commission will continue to encourage the robust innovation that has been triggered by the Part 15 rule amendments.

EIA/CEG does not support partial solutions that would merely reduce to a limited degree, or simply postpone, adverse effects on Part 15 products. Ideas such as grandfathering Part 15 devices for three years, delaying expanded LMS operations, or concentrating LMS operations in a portion of the 902-928 MHz band have all been proposed, but none of these measures would preserve the full measure of opportunities for manufacturers, retailers, and consumers that were created just a few short years ago by the Part 15 rule amendments. Under present circumstances, it is premature to make any permanent authorization for AVM or LMS in the 902-928 MHz band.

On the present record, EIA/CEG believes that the Commission should abandon its effort to accommodate additional Part 90 uses in the 902-928 MHz band. We respectfully recommend that the proposals in the Notice be withdrawn. To the extent the Commission may remain inclined to create expanded opportunities for LMS-type services, it should focus on frequencies other than 902-928 MHz.

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**REPLY COMMENTS OF THE CONSUMER ELECTRONICS GROUP
OF THE ELECTRONIC INDUSTRIES ASSOCIATION**

The Consumer Electronics Group of the Electronic Industries Association ("EIA/CEG") hereby replies to comments submitted by other parties in response to the above-captioned Notice of Proposed Rulemaking ("Notice").¹ EIA/CEG's review of the first-round comments confirms its view that adoption of the proposed Part 90 rules for the Location and Monitoring Service ("LMS") would cause serious injury to manufacturers and retailers of numerous Part 15 products operating at 902-928 MHz (generally, "900 MHz") and to the many organizations and individuals that rely on these products. The Commission should not imperil the many benefits which have been and continue to be produced as a result of the Commission's affirmative, long-standing encouragement to developers of 900 MHz Part 15 products. Accordingly, the proposed Part 90 rule changes should be withdrawn.

I. The Commission's Part 15 Amendments Are Producing the Desired Results.

The first-round comments confirm EIA/CEG's view that innovation is flourishing as a result of the Commission's decision to expand opportunities for Part 15 devices to operate

^{1/} 8 FCC Rcd. 2502 (1993) ("Notice").

in the 902-928 MHz frequency band. The Commission has steadfastly sought to encourage development of Part 15 products for use at 900 MHz.² The record demonstrates that many companies have responded to the Commission's actions by developing innovative products that are winning wide acceptance in the business and consumer markets.

The comments filed in response to the Notice discuss a startling diversity of valuable purposes served by 900 MHz products.³ Examples of products designed primarily for use by residential consumers include cordless phones, wireless audio and video accessories, wireless microphones, radio control technology for satellite receivers and home entertainment systems, and remote control toys. The range of 900 MHz business products is even broader. These products include portable data transmission systems; wireless heating and cooling management and control systems; remote systems for traffic light control and utility substation monitoring; anti-shoplifting devices; wireless PBXs, wireless local area networks ("LANS"), and other wireless office telecommunications systems; automatic meter reading; bar code-driven data transaction systems; air quality monitoring systems; hospital automation and monitoring systems, including patient monitoring equipment and medical alert devices; public safety monitoring equipment; automatic identification for shipping, receiving, work-in-process and putaway; etc. Some classes of products are used in both consumer and business environments: fire and property protection systems may be the best example.

A comprehensive market survey is beyond the scope of these reply comments, but it is clear that the potential market for 900 MHz Part 15 products is enormous. One leading

^{2/} See Comments of Sensormatic at 7-17; Comments of ADEMCO at 7-9, 12-15. [All citations herein to "Comments" refer to responses filed on or about June 29, 1993, in PR Docket No. 93-61.]

^{3/} See, e.g., Comments of Norand at 4-5; Comments of North American Telecommunications Association ("NATA") at 2-7; Comments of Part 15 Coalition at 1-2 and Attachment B.

indicator of the growth potential of this market is the substantial investment that has already been made in research and development. Ericsson alludes to "hundreds of millions of dollars in research and development, marketing, and other costs to develop and produce low power Part 15 equipment for the 902-928 MHz band."⁴ The Alarm Industry Communications Committee mentions "billions of dollars invest[ed] in research, development, manufacturing, and marketing of Part 15 devices."⁵ The Part 15 Coalition estimates total Part 15 investment in 900 MHz products at "nearly two billion dollars."⁶

These estimates appear to be consistent with individualized reports of Part 15 R&D efforts. A single utility has invested approximately \$30 million of ratepayer money in research and development of an "automated distribution system automation program."⁷ An alarm device manufacturing company has invested \$10 million in development of 902-928 MHz products.⁸ A manufacturer of bar-code technologies reports having invested more than \$83 million in 900 MHz technology since 1990.⁹ Considering the scores of manufacturers which are developing Part 15 products for this band, estimates of billion-dollar-plus investment in R&D and related expenses seem to be very much on the mark.

Sales figures confirm that this confidence in the growth of 900 MHz Part 15 products is well-founded. In the case of 900 MHz cordless phones, one manufacturer estimates that total industry sales in 1994 will be on the order of \$150 million,¹⁰ and explosive

4/ Comments of Ericsson at ii.

5/ Comments of Alarm Industry Communications Committee at 8.

6/ Comments of Part 15 Coalition at 6.

7/ Comments of Southern California Edison Company at 4.

8/ Comments of ADEMCO at 9.

9/ Comments of Symbol Technologies at 3.

10/ Comments of Cobra at 3 n.1.

growth is expected in the next few years.¹¹ For wireless LANs, one manufacturer estimates aggregate U.S. sales of \$39 million in 1992 and predicts that the market could approach \$700 million by 1996.¹² In the case of wireless security systems, "millions of Part 15 devices [are] in use as an integral part of alarm services," and a growing percentage of these are in the 900 MHz band.¹³ For another category of consumer product, a single manufacturer reports unit sales of 300,000 to date, with monthly volumes still doubling during what is still considered to be a "very early stage[] in the product sales cycle."¹⁴ Other related figures are similarly impressive.¹⁵

This record demonstrates in a compelling fashion the very substantial benefits that accrue to American consumers and to business and governmental organizations as a result of the Commission's previous efforts to encourage development of Part 15 products. This record makes it inappropriate to proceed with a proposal that would cause serious injury to Part 15 manufacturers and vendors, as well as to literally millions of present and future users of 900 MHz Part 15 products. Indeed, it illustrates that the time may have arrived to reconsider the

11/ See Comments of InterDigital Communications Corporation at 7 (expects "millions of Part 15 cordless phones operating in the 900 MHz band" within the next few years); Comments of Sensormatic Electronics Corporation at 2 (expects "approximately 30 million high-powered digital cordless phones operating in the band by 1996").

12/ Comments of Telxon at 3.

13/ Comments of Alarm Industry Communications Committee at 4.

14/ Comments of Recoton at 2.

15/ See, e.g., Symbol Technologies at 2-3 (has installed 2 million bar-code scanners and hand-held computers, and 900 MHz is fastest-growing segment of home automation market; expects to ship \$50 million worth of 900 MHz products in 1993).

policy which accords Part 15 devices a status inferior to that of every other authorized use of the spectrum.¹⁶

II. The Proposed Part 90 Amendments Could Create Serious Interference Problems.

The initial responses to the Notice strengthen EIA/CEG's concerns about the danger that adoption of the proposed Part 90 amendments could create intolerable interference problems. The record provides abundant evidence that expanded private radio use of the 902-928 MHz band would lead to interference that could undermine opportunities for Part 15 innovation and impede consumers from using devices they have already purchased. Such a development most assuredly would not serve the public interest.¹⁷

The comments of the Mobile and Personal Communications Consumer Radio Section of the Telecommunications Industry Association ("TIA") contain a technical analysis which shows that "a wideband pulse-ranging system cannot reliably operate among even a moderate deployment of uncontrolled, randomly-located Part 15 devices."¹⁸ Similar results

^{16/} See Comments of Knogo Corporation et al., at 12-13; Comments of Domestic Automation Company at 12-14. It is difficult enough to operate under a regime in which products that generate and use radio frequency energy are bound (1) not to cause harmful interference to any authorized radio service and (2) to accept whatever interference may be caused to them. 47 C.F.R. § 15.5(b) (1992). Instead of relegating Part 15 products to a status that is inferior even to newly proposed use of a particular frequency band, the Commission may find it more fruitful to consider giving at least some increased status and protection to Part 15 products (as appears to be contemplated for "Part 16" products in the yet-to-be-adopted rules for Personal Communications Services).

^{17/} EIA/CEG is aware that serious concerns have also been expressed about the potential for interference from LMS to other services, such as amateur radio. These concerns, like those relating to Part 15 use, merit serious consideration by the Commission.

^{18/} Comments of TIA at 2-4.

are reflected in analyses by several other parties, including AT&T Bell Laboratories.¹⁹ These problems are already being experienced to some degree, but they would grow considerably worse if the proposals in the Notice were to be adopted.²⁰

The Commission cannot responsibly permit this kind of interference situation to develop,²¹ especially in view of the important role played by Part 15 products in protecting the safety of life and property.²² Frequency management is among the Commission's most fundamental responsibilities. The Commission does not ordinarily authorize multiple uses of a frequency band when it knows that the likely result will be interference, and it should not depart from its past practice in this instance.

III. Proponents of LMS Have Not Adequately Addressed Part 15 Issues.

The first-round comments have not provided any assurance that expanded private radio use of the 902-928 MHz band can be authorized without disrupting existing uses of those

19/ See Comments of AT&T at Appendix A; Comments of Metricom, Inc at 7-8 and Appendix A (because of fragile design of Teletrac system, Part 15 device can interfere with Teletrac wideband-type system at distances of 8.2 -- or possibly even 104 -- miles); Comments of Recoton at 3 ("even the 'permitted' out-of-band emissions would not only interfere, but may even saturate a typical Part 15 receiver -- rendering it totally useless"); Comments of Thomson at 3 (preliminary tests showed interference from simulated LMS system to wireless headphone at distance of up to 1 kilometer); Comments of Itron, Inc. at 6-7 (believes its automatic meter reading system could well interfere with the Teletrac system, and, conversely, that Teletrac and other LMS systems will "most likely interfere" with Itron's AMR system).

20/ See Comments of ADEMCO at 5-10 (discusses susceptibility of AVM systems to interference from Part 15 devices; problems have already arisen despite very limited deployment of AVM systems).

21/ See Comments of Metricom at 11 n.8 (anticipates "huge public outcry" as "angry consumers and businesses (and their congressional representatives)" respond to inability to use their Part 15 devices).

22/ See Comments of Alarm Industry Communications Committee at 7 (the greater possibility of interference under revised rules "could mean the difference between life or death").

frequencies. Although the Commission specifically asked about interrelationships between Part 15 and Part 90 operations, proponents of LMS provided no meaningful answers.

Indeed, many of the proponents of AVM or LMS provided no information whatsoever regarding the likely effects of the proposal in the Notice on Part 15 devices.²³ Other AVM or LMS proponents provided only the most cursory of assurances that AVM/LMS and Part 15 devices can co-exist.²⁴

More troubling still are the answers (and especially the non-answers) to the Commission's request for guidance on how the various uses of 902-928 MHz can coexist. Although the Commission specifically asked what measures would be needed to minimize interference between AVM/LMS systems and other authorized uses of the 902-928 MHz spectrum, most proponents of expanded Part 90 use of the 900 MHz band ignored the question. No specific suggestions on this topic were offered by Teletrac, Amtech, Pinpoint, and many of the other AVM/LMS organizations.²⁵ One organization, citing interference from

^{23/} See, e.g., Comments of IVHS America (no discussion of Part 15); Comments of Location Services (same); Comments of Amtech Communications (same).

^{24/} See, e.g., Comments of Pinpoint Communications, Inc. at 28; Comments of Teletrac at 11-12 n.13 (in lengthy two-volume pleading, a single footnote addresses Part 15; belief that cross-interference is unlikely rests on assumptions (1) that most Part 15 devices will be (a) consumer devices and (b) used indoors and (2) that growth of Part 15 devices will be stopped by saturation); Comments of Mark IV IVHS Division at 15 (tests of Mark IV system have found no cases "in which any Mark IV system either disrupted or impaired the operations of other devices or received interference from any of these devices which disrupted or impaired its own operations"); Comments of Hughes Aircraft Company at 14 (for local-area LMS systems, interference from Part 15 and other uses should be "a relatively rare event").

^{25/} One organization that failed to mention Part 15 did ask that LMS be given "co-primary" status in the band to avoid displacement or interruption as a result of higher priority claims on the spectrum. Comments of The Interagency Group at 11-12. This seems to reflect a tacit recognition that LMS services would be vulnerable to interference from, or could cause interference to, Federal Government Radiolocation or Industrial, Scientific, and Medical ("ISM") Services.

wireless LANs, anti-shoplifting clothing tags, narrowband LMS, and amateurs, suggested that Part 15 uses should be restricted to frequencies reserved for narrowband LMS systems.²⁶ But generally, the proponents of AVM and LMS services gave remarkably short shrift to Part 15 products.

No party in this proceeding has demonstrated a justification for curtailing opportunities for Part 15 products to operate in the 900 MHz band.²⁷ Indeed, the Commission has already made an affirmative determination that Part 15 innovation in this band is in the public interest, and the marketplace response to the Commission's encouragement has fully justified the Commission's expectations. The record provides no foundation upon which the Commission could at this point radically reverse its course.²⁸ Moreover, even if future products could properly be limited, curtailing the use of existing 900 MHz Part 15 products would present insurmountable obstacles.²⁹

^{26/} Comments of Mobilevision, L.P. at 23-24, 45.

^{27/} EIA/CEG anticipates that AVM/LMS proponents may assert that there is no real danger of interference between Part 15 products operating under existing rules and Part 90 services operating under the proposed rules. The evidence of record is to the contrary. Nonetheless, were the Commission to rely on assurances from AVM/LMS proponents that their services and Part 15 products can peacefully coexist, those parties should not later be permitted to complain about Part 15 products that operate within applicable technical standards or to seek to curtail the operation of these devices.

^{28/} See Motor Vehicle Manufacturers Ass'n v. State Farm, 463 U.S. 29, 42 (1983); Great Boston Television Corp. v. FCC, 444 F.2d 841, 852 (1970). The Commission is also firmly committed to a regulatory course under which spectrum allocations and technical standards are designed so as to minimize the likelihood of interference from Part 15 products to authorized radio services. See generally Comments of ADEMCO at 10-11. The decision to allow Part 15 devices greater latitude in what is essentially an ISM band was perfectly consistent with this policy. By contrast, it would be quite a different matter to change the rules of such a band to incorporate services that are fall more sensitive to interference than are ISM uses, especially now that the Part 15 devices whose creation the Commission encouraged are now becoming widely deployed, precisely as the Commission had intended.

^{29/} See Comments of Southern California Edison Company at 10 ("questions how the Commission would implement an order directing the millions of Part 15 devices that are currently in the hands of consumers to cease operations").

IV. Proponents of LMS Have Not Established a Need That Would Justify Causing Substantial Injury to Part 15 Manufacturers, Vendors, and Users.

Responses to the Notice have also called into question the need for expanding Part 90 operations in the 902-928 MHz band. There appear to be other ways in which vehicle identification and location capabilities can be provided, without causing the kinds of interference problems that are inherent in the present proposal.

A variety of parties have identified other frequency bands that might be used for LMS-type services, as well as other existing services and technologies that can fulfill the same needs.³⁰ For the primary purposes to be served by LMS, there are "alternate, superior, and considerably more spectrum-effective techniques" such as Global Positioning Service, PLMRS, LMS, and PCS.³¹ Other possibilities identified in the comments include police radio service (for stolen vehicle recovery), Electronic Tracking Service (for tracking stolen goods), Loran C technology, satellite networks, and FM subcarriers.³² Further, as at least two parties observed, proponents of LMS operations will have the opportunity to seek other spectrum by way of auctions, under legislation that is expected to pass the Congress relatively soon.³³

Meanwhile, the case for FCC action in favor of expanded Part 90 use for AVM/LMS services has continued to weaken. Substantial questions have been raised about

30/ See Comments of Norand at 10-13; Comments of NATA at 11-12; Comments of Southern California Gas Company at 6-9;

31/ Comments of Southern California Gas Company at 6.

32/ Comments of Itron, Inc. at 7; Comments of Domestic Automation Company at 9-11; Comments of ADEMCO at 18; Comments of Sensormatic at 19-20; Comments of AT&T at 6; Comments of Part 15 Coalition at 13-16.

33/ See Comments of NATA at 13; Comments of Part 15 Coalition at 18-19.