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OCT 21 1994

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

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October 21, 1994

EX PARTE

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

DOCKET FILE COPY ORIGINAL

Re: PR Docket No. 93-61  
Automatic Vehicle Monitoring Systems

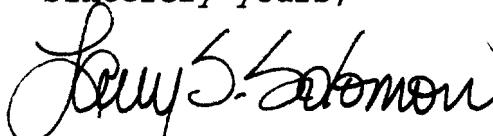
Dear Mr. Caton:

On Thursday, October 20, 1994, Robert Dilworth of Metricom, Inc. I met with Thomas P. Stanley, Chief Engineer, Office of Plans and Policy, to discuss the views of Metricom, Inc., as stated in its various pleadings filed in this proceeding. The attached materials were used in connection with our presentation.

Two copies of this letter are being submitted to the Secretary of the Commission pursuant to § 1.1206(a)(1) of the Commission's Rules.

If there are any questions in connection with this matter, please contact the undersigned.

Sincerely yours,

  
Larry S. Solomon

Attachment

cc: Thomas P. Stanley, Chief Engineer

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**PRESENTATION**

**TO**

**THOMAS P. STANLEY, CHIEF ENGINEER  
OFFICE OF PLANS AND POLICY**

**METRICOM, INC.  
October 20, 1994**

# Part 15 Applications

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Many Applications in the Public Interest:

- Wireless computer communications networks
- Remote meter reading
- Security and alarm devices
- Anti-theft devices
- Digital cordless phones
- Wireless PBX systems
- Wireless headphones, speakers and video

# Metricom

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## Metricom Network Applications:

- Utility distribution automation
  - Improved service and reduced costs to ratepayers
  - Energy conservation; reduced pollution
- Industrial communications
  - Waste water districts
  - Gas well field monitoring
- Wide-area data communications networking
  - Access to corporate resources
  - Wireless Internet/NII
  - Low cost for schools and individuals

# Metricom

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## Advantages offered Metricom users:

- High speed performance
  - Not possible on most licensed bands
- Low cost service
  - Cost of spectrum will preclude this in PCS bands
- High capacity
  - Amount of spectrum not available elsewhere
  - Regional area networks
    - (Not possible with unlicensed PCS)

# Southern California Edison

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## Extensive User of Metricom Part 15 Radio Network:

- Benefits

- Voltage conservation saves approximately 1 billion kWh per year
- Yields \$40 million annual savings to ratepayers
- Reduces fuel consumption at generation plants
- Additional benefits include outage detection and remote switching

- Requires at least 30,000 radio network

- More than 6,000 installed at SCE to date
- Installed using ratepayer money

# The Operational Problem

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Part 15 and AVM/LMS can not co-exist as presently proposed without harm to both:

- Part 15 transmissions will interfere with AVM/LMS receivers
- Band hierarchy enables AVM/LMS to force Part 15 devices to cease operation

# A VM/LMS Operation

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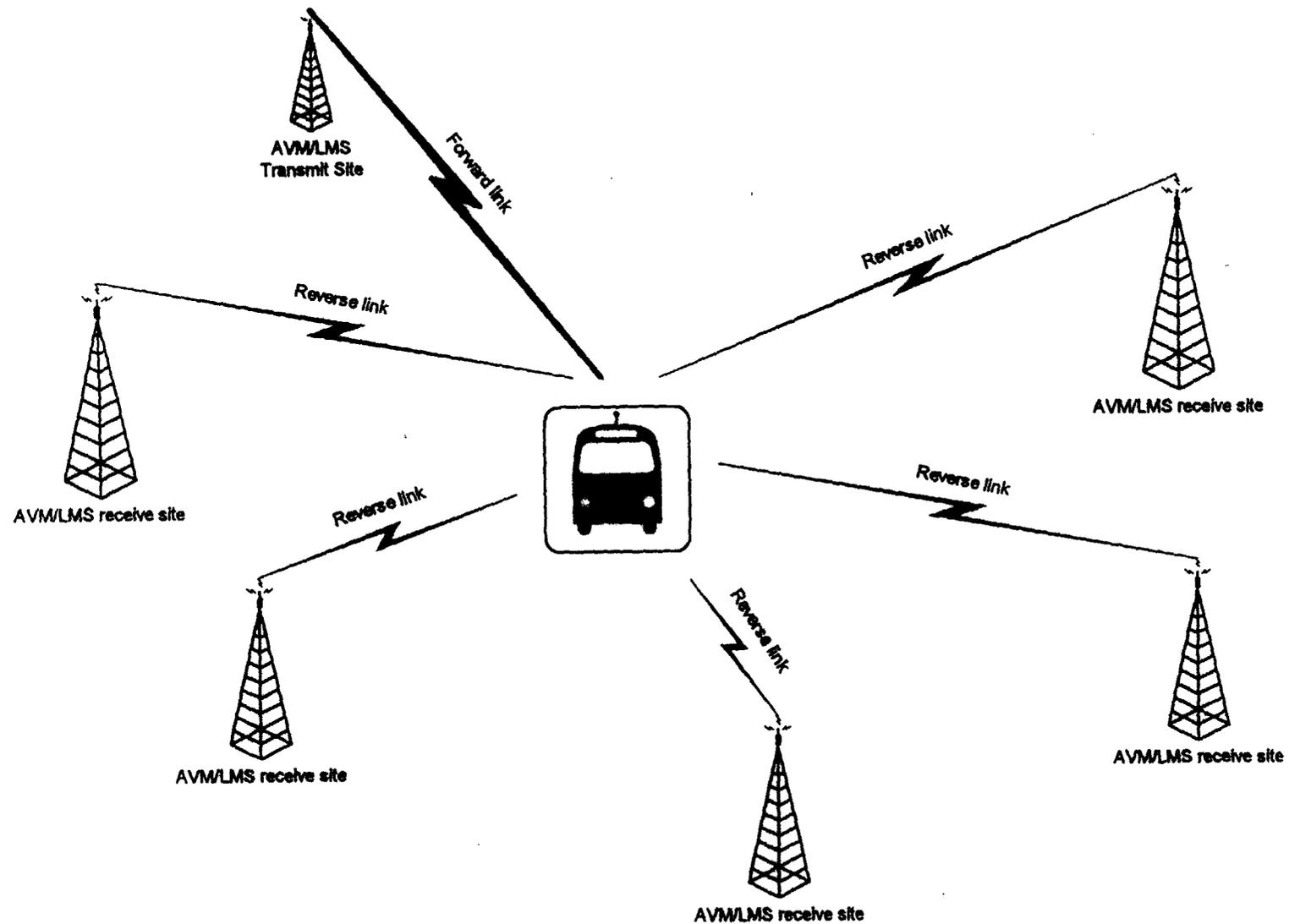
Wideband A VM/LMS 902-928 MHz

Receivers:

- Efficient interference collectors
- Sited to optimize receipt of all in-band signals
- Very sensitive to ALL in-band signals

# AVM/LMS System Diagram

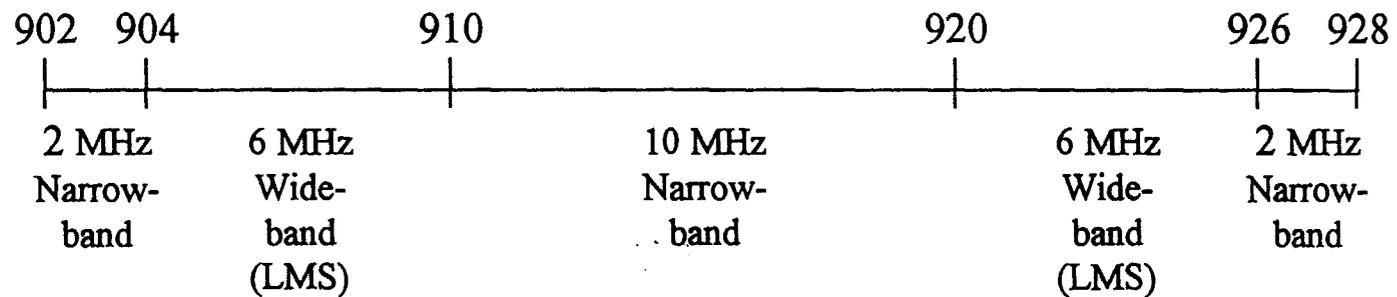
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# Staff Proposal

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- Segments Band as Follows:



- In the two 6 MHz segments:
  - Part 15 operator must resolve interference if Part 15 device:
    - a. uses outdoor antenna more than 5 meters above ground
    - b. uses equipment not meeting new technical requirements
    - c. is a field disturbance device
  - Part 15 device complying with one of these thresholds is presumed not to cause interference

# Staff Proposal

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## Threshold Issues:

- Makes Part 15 resemble licensed service
  - Each antenna location must be identified, scrutinized
  - Results in increased cost to consumers
  
- Imposes significant enforcement and legal burdens
  - Which specific device is causing interference?
  - House-to-house searches?

# Staff Proposal

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## Height Restrictions Impermissibly Change Part 15 Rules.

- Beyond scope of proceeding (see Erratum)
- Arbitrarily single out a class of Part 15 devices
- Will force Part 15 devices out of band
- Discourages further development of Part 15 devices

# Staff Proposal

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## Height Restrictions Are Technically Meaningless

- Fail to consider terrain and structures
  - relative height of interferers
- LMS receivers located and optimized to receive from street-level and in-building LMS transponders

# Staff Proposal

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## Height Restrictions Devastating To:

- Metricom
- Ademco
- Cylink
- Tetherless Access
- CellNet
- Many others
- Future Part 15 development

# Staff Proposal

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Effectively concentrates Part 15 operations into 14 MHz or possibly 4 MHz:

- Some Part 15 systems designed to require more than 14 MHz
  - Part 15.247 rules require spreading
- Reduces opportunity of all systems to avoid interference
- Protected LMS would reduce useable Part 15 spectrum by nearly 50%

# Fairness of Proceeding

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Part 15 manufacturers and users have relied on FCC policy:

- Encouragement of Part 15 in 902-928 MHz band
- No reason to expect a new licensed service requiring extremely quiet RF environment in the band
- No reason to expect that Part 15 operation in the band would be placed in jeopardy

# Part 15 Community Proposal

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- Upper band-edge location of narrowband forward links
- No wideband forward links
- Presumption of non-interference to AVM/LMS by Part 15 devices
- Development of technical limitations on AVM/LMS reverse links
- No Wideband LMS at 910-920 MHz

# Part 15 Community Proposal

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## A True Compromise:

- Permits LMS to be established as a new service
  - Initial position was to maintain the *status quo*
- Requires Part 15 to accept significantly more interference
- Permits Part 15 to continue to operate
- Requires development of the best technology
- Encourages cooperation between Part 15 and LMS

# Alternative Courses of Action

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- Terminate the rulemaking
- Implement AVM/LMS at the expense of Part 15 operations
- Adopt Part 15 Community compromise

# Conclusion

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Do not adopt any resolution to this proceeding that contains a height restriction on Part 15 devices.