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October 21, 1993

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

RECEIVED  
OCT 21 1993  
FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

Re: Ex Parte Communication in PR Docket No. 93-61

Dear Mr. Caton:

Pursuant to Section 1.1206(a)(2) of the Commission's Rules, notice is hereby given of an ex parte communication regarding the above-referenced proceeding. The instant notice is being submitted in duplicate.

On October 20, 1993, the undersigned and John J. McDonnell of this office, accompanied by Donald R. Gray, Chairman & President of MobileVision, L.P., along with Anthony J. Spadafora, Vice President/Technology and Graham Smith, Director/Systems Research, made an oral presentation to Ralph Haller, Chief, Private Radio Bureau, and members of his staff.

Attached hereto is a copy of materials distributed to those who attended the meeting.

The meeting adjourned after the Office of the Secretary had closed. Therefore this notice is being filed the day following.

If there are any questions regarding this matter, please contact the undersigned.

Sincerely,

REED SMITH SHAW & McCLAY



Marnie K. Sarver

Enclosure

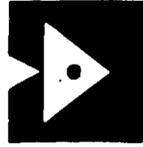
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# **FCC Presentation**

**Wednesday, October 20, 1993**

**By MobileVision**





## **900 MHz System**

- **High Capacity, Low Cost**
- **Uses 8 MHz per Interim Rules**
- **Provides for Voice and Data related to Vehicle Location**
- **Relied on long-standing non-interference policy**
- **Provides Services for all Targeted Markets**
- **Provides Services that other Location Technologies cannot: ERS, SVR**
- **Nationwide for auto companies, auto clubs**

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# MobileVision System

	<b>Present System</b>	<b>In Development</b>
Channels	260 simplex	375 duplex
Voice	Simplex, VOX Telephone Interconnect	Duplex Telephone Interconnect
Data Rate/Channel	2400bps 8000bps	48.6kbps 19.2kbps 9.6kbps
Locations/Hour	240,000	1,400,000
Features	ERS Hand-held Unit Mobile Data Terminals Frequency Re-Use Simultaneous Location/Data/Voice Stolen Vehicle Alarms Command and Control Central	ERS with telephone option Duplex voice Digital Voice Higher data transfer Improved location capacity

**ONLY WIDEBAND SYSTEM CURRENTLY ABLE TO SIMULTANEOUSLY PROVIDE LOCATION,  
AND RELATED DATA AND VOICE COMMUNICATIONS**

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# Marketing Studies, ERS–SVR



- **Decision Research/Chicago Marketing Research**
- **22% of households would buy the service**
- **Marylander Marketing Research in 16–city study for a major automobile manufacturer, showed 83% of those surveyed would use**
- **Top Concerns: Personal safety on the road and personal safety when leaving car**
- **Requires Location, Data, & Voice (64% of respondents were interested in voice)**

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# Marketing Studies, Commercial Systems



- **Penetration rate of 9% for location only**
- **Demands are for combined Voice, Data & Location**
- **46% use Voice**
- **Must provide services from one low cost unit**

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# Current SVR-ERS Market



- **Auto Manufacturer – 1997 Model Year**
- **1.8 Million to 3 Million Units per Year**
- **Teletrac currently ahead & MobileVision a contender**
- **Won't happen if Pinpoint or SWB proposals are adopted**
- **Price Range: \$8-\$10 per Month**
- **Biggest differentiator of all markets**

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# System Comparisons



Company	Deployment Date	Data Comm	Voice Comm	Stolen Car / ERS
Pinpoint	1995	Yes	No	No
SWB	Changing from 450 MHz, 1995?	Yes, with Cellular	Yes, with Cellular	No
Teletrac	Now, 6 cities	Yes	Developing now	Yes
MobileVision	Now, 3 cities	Yes	Yes	Yes

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# Southwestern Bell

- **Their 4 MHz proposal provides them a virtual monopoly – adjunct to Cellular**
- **All remaining wideband providers could not provide data or voice to adequately compete**
- **Interference concerns**
- **Re-engineering 450 MHz system in Australia to 900 MHz**
- **System implementation inconsistent with interim rules**
- **No other company agrees with 4 MHz Allocation**

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# Economic Views

- **Well known economists rarely agree**
- **Fixed Costs are the same for tower rental & backhaul,  
Chicago @ 80 sites:**
  - \$1000 per month site rental
  - \$700 per month backhauled per site
  - \$1.6 million per year, plus overhead, marketing & sales.
  - \$4 million, total annually
- **Average wideband user @\$10 per month mandates 400,000 users to break even on fixed costs and business costs**
- **The more systems, the lower capacity, the higher use fees should be, however, price will still be \$8-\$10 and the other wide band providers will be out of business**
- **Economists have yet to put the actual revenues from a wide band system in a model**
- **Commercial rates are expected to be \$12-\$22 and data rate \$15 per subscriber**

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# Pinpoint

- **They are where we were two years ago**
- **Their assumptions and conclusions reflect their inexperience**
- **Their demonstration in DC did not replicate real world conditions**
- **System implementation inconsistent with interim rules**
- **No other wideband provider supports their proposal**

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# MobileVision

# Teletrac

Fierce Competitors

Same

Auto Manufacturers

Same

Rollout 60% US by 1996

?

Three Initial Systems

Six Systems

Ready to Deploy

Same

8 MHz is optimal

Same

We believe sharing is impractical

Same

We agree regarding technical  
analysis

Same

We are seeking financing to  
construct

Same

Service to the public will be delayed  
if interim rules change

Same

Public won't benefit if rules change

Same

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# Dilemma



## FCC

- **Feasibility of sharing**
- **Political pressure for competition**
- **Four wideband respondents**
- **Part 15**
- **Narrowband interference**

## MOBILEVISION

- **Can't build system without financing**
- **Financing won't happen without certainty of build out**
- **Auto manufacturers won't commit without certainty of build out**
- **We are ready to deploy**
- **Others are 18 months away or longer**

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# Considerations for Solutions

- **Real World: 2 companies have deployable technology today**
- **Other potential licensees will not be ready for 18 months**
- **Public should be allowed to benefit from immediately deployable systems**
- **ERS and SVR systems have immediate public benefit**
- **Companies ready to provide service to the public need clear assurance so they can finance and customers can be assured of uninterrupted service and coverage**
- **Other companies should only be allowed to construct if they don't interfere**
- **Final rules should be as consistent as possible with interim rules under which systems were developed**

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# Foundations for Wideband Agreement

- **All wideband providers agree that they cannot exist on the same frequency at the same time**
- **All wideband providers except Pinpoint agree that they cannot share with narrowband providers**
- **All wideband providers except Southwestern Bell agree that at least 8 MHz is needed for wideband systems**
- **All wideband providers except Pinpoint agree that time sharing cannot work**

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# MobileVision Proposed Solutions

**In order to facilitate:**

- **Near-term deployment of mature, tested wideband LMS systems,**
- **Competition in the provision of broad based services to the public, meeting marketplace needs and demands,**
- **Continued investment in entrepreneurial efforts that are currently ready to provide those services,**

**MobileVision urges the Commission to adopt the following requirements:**

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# Licensing and Allocation

- **Temporarily require new applicants to be located 110 miles from previously licensed stations but set the period of deferred new licensing at two years, rather than the five years proposed, as MobileVision believes the shorter period would be sufficient to meet the objectives listed.**
- **Adopt the NPRM separation of wideband and narrowband providers; allocate the 10 MHz proposed for these services but grandfather existing narrowband sites with proper coordination.**

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# Certification

- **Require a licensee to file a certification that its system:**
  - **is not a test or beta system**
  - **is currently capable of deployment on a commercially available basis (e.g., that production equipment is being manufactured)**
- **Certification 30 days prior to commencement of system construction**

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# Protection from Interference

- **Where two or more licensees have provided certifications, the first system constructed in a license area that provides service to at least one paying customer will be protected from interference by another AVM licensee.**
  - **Interference shall mean degradation of service at any fixed site or mobile unit.**
- **Subsequent applicants for licenses (after the two year period) must certify capability and operate on a non-interfering basis with the initial system in an area on the applicable frequency band.**

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# Results If Proposals Not Adopted

- **Technical Confusion**

Time sharing/frequency sharing of systems already in market and deployed at time of Report & Order?

Lack of direction in markets such as Dallas where we are building and Pinpoint is testing?

Responsibility for re-engineering?

Upper limit for number of entrants and number of “re-engineerings”

Mechanisms for these decisions?

- **Investor Paralysis**

- **End Result we Fear**

Discontinuity of service

Abandonment of entry

Bending technology to try and satisfy “sharing” or band splitting leads to “non-sharing” and lack of public service

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# ISSUES ADDRESSED

- **FUNDAMENTALS and  
TRADE-OFFS**

**All four systems are based on the same  
fundamental principles**

- **CO-EXISTENCE**

**Local Area and Wide Band Systems**

**Both systems suffer**

**Detailed interference analysis submitted by  
MobileVision**

**Pinpoint demonstration reflects their  
inexperience**

- **TIME SLICING**

**Technically possible**

**Practically disastrous**

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# System Trade-Offs - 1

$$T_p = \frac{L}{R^2 F_c^3 (S/N)_{out}}$$

L= code length, 63,127,255,511,1023

F<sub>c</sub>= Chipping rate

## Desired short T<sub>p</sub> (duration of location pulse)

Therefore, short L	PG/JM affected
high F <sub>c</sub>	B/W affected
high (S/N) <sub>o</sub>	Pt, Range affected
	(cluster size, cost)

## Design aims:

- shortest L to maintain reasonable JM
- highest F<sub>c</sub> for B/W in allocation

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# System Trade-Offs - 2

## COMPARISONS:

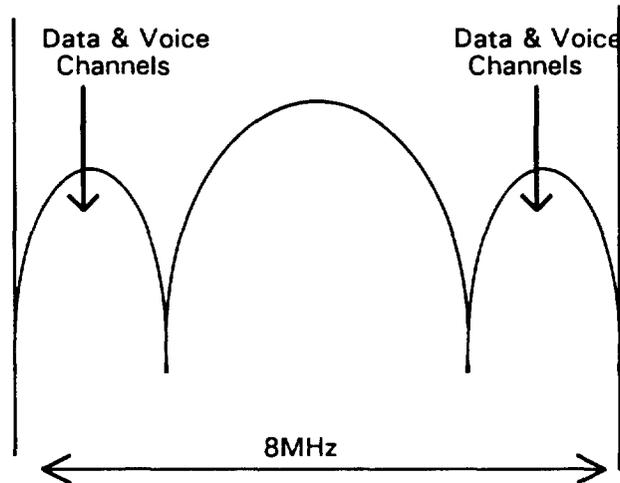
	Teletrac	MobileVision	SBMS	Pinpoint
<b>L</b>	1023	255	511	127
<b>JM</b>	20dB	14dB	23dB	5dB
<b>Fc</b>	2MHz	2MHz	1MHz	5.768MHz
<b>B/W</b>	8MHz	8MHz	4MHz	23MHz
(Interim rule 8MHz)				
<b>theoretical Tp</b>	158ms	32ms	1680ms	0.65ms
(R=10secs. accuracy)			(X4)	
<b>Max. theoretical locations/hour</b>	<b>22,785</b>	<b>112,500</b>	<b>8,570</b>	<b>2,769,230</b> (x24 for BW,x2 for L, /2 for command cf MV)

Note: Above figures are calculations based on the stated parameters of each system.  
They are intended to be used as a way of comparing the basic system designs

**EACH SYSTEM IS BASED ON THE SAME FUNDAMENTALS.**

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# Bandwidth



- 1st sidelobes need to be within allocated bandwidth
  - MobileVision system utilizes sidelobes for Data and Voice ancillary services
- 
- **MobileVision System is spectrally very efficient**
  - **Uses all of the allocated Bandwidth**
  - **Power distribution through the band very efficient**
  - **Achieved by stringent control and design.**

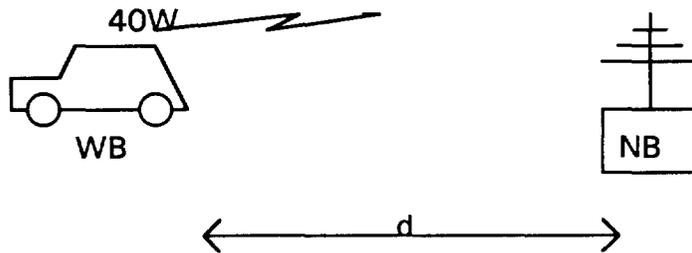
**MobileVision proposes more stringent out of band emissions**

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# Local Area and Wide Band Systems-1

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## Wide Band Mobile blocking Local Area RX



**PNB = 30W**      **dmin = 1000 feet** (3W, 10dB direction gain antenna)

Proposed power level limits for Local area systems in the 8MHz bands

PNB = 200mW      dmin = .98 miles  
PNB = 50mW      dmin = 1.38 miles

**Momentary blocking**  
**Real Problem**

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