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FEDERAL COMMUNICATIONS COMMISSION  
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February 1, 1994

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

DOCKET FILE COPY ORIGINAL

Re: Notice of Ex Parte Contact  
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 February 1, 1994, the undersigned and John J. McDonnell of this office, met with Ralph Haller, Chief, Private Radio Bureau, and members of his staff. The content of the discussion is summarized in the attached letter.

Please associate this material with the record in this proceeding.

Sincerely,

REED SMITH SHAW & McCLAY



Marnie K. Sarver

Enclosure

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February 1, 1994

Hand Delivered

Mr. Ralph H. Haller, Chief  
Private Radio Bureau  
Federal Communications Commission  
2025 M Street, N.W.  
Suite 5002  
Washington, D.C. 20554

Dear Mr. Haller:

MobileVision is a participant in the current Rulemaking proceeding (PR Docket No. 93-61) regarding LMS services and a current licensee for such services under existing rules, with licenses at 918-926 MHz. MobileVision has fully developed a system with the broadest capabilities that will offer the public a range of desirable services furthering public needs for safety and security, improved business productivity, and that will assist greatly in the advancement of intelligent vehicle highway systems ("IVHS").

MobileVision is gravely concerned that the positions expressed by other participants in ex parte communications with the staff of the Private Radio Bureau ("PRB") may lead to the adoption of rules that are directly contrary to the public benefit of establishing a truly competitive environment in which prospective users of LMS will have the opportunity to avail themselves of such broad valuable services and in which the goals of IVHS will be advanced. If so, MobileVision believes that the restraint on services and lack of capacity will foreclose market entry and frustrate the purposes of LMS and IVHS.

This concern has been heightened by the submission of Pactel Teletrac ("Teletrac"), filed with the Commission on January 26, 1994, following a meeting between Teletrac representatives and the PRB the day before. As set forth below, Teletrac's submission is directly contrary to all of its submissions to the Commission for almost two years, is technically unfounded and would, if adopted, leave Teletrac in a

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monopoly position for wideband LMS in the proposed allocated bandwidth. It arises, MobileVision believes, from the fact that Teletrac must now realize its system will not address market requirements adequately in an open and competitive environment. In addition, MobileVision's concerns arise from its own ex parte communications with PRB staff regarding the technical parameters of LMS systems in general and the requirements for economic viability of such systems if they are to competitively provide services desired by the public.

Underlying its specific concerns with regard to these ex parte communications, is MobileVision's threshold concern that the rules address the basic objectives of the Commission. The Commission has already noted the importance of LMS systems within the national goal of developing IVHS for the future. As set forth in the NPRM, "[t]hese systems, which are now operating under interim rule provisions adopted in 1974, will likely constitute important components of the future Intelligent Vehicle Highway System and tracking of cargo in the trucking, railroad and maritime industry."

Congress has set IVHS as a national priority and authorized \$660 million for the first phase of its accomplishment. The goals of IVHS in the United States are:

- Improved safety
- Reduced congestion
- Increased and higher quality mobility
- Reduced environmental impact
- Improved energy efficiency
- Improved economic productivity
- A viable IVHS industry

Historically, IVHS has been divided into five functional areas:\*

- Advanced Traffic Management Systems (ATMS)
- Advanced Traveler Information Systems (ATIS)
- Advanced Vehicle Control Systems (AVCS)

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\* The source for the summarized description of IVHS is "Strategic Plan for Intelligent Vehicle-Highway Systems in the United States" Report No. IVHS-AMER-92-3, prepared by IVHS America, May 20, 1992.

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- ° Commercial Vehicle Operations (CVO)
- ° Advanced Public Transportation Systems (APTS)

The goals for IVHS are ambitious and as the attached descriptions of the functional areas make clear, a broad array of services are required to meet those goals. Many of the functional areas require unrestricted voice and high speed data capability to meet service needs. LMS systems will not further those goals unless they are capable of, and are not restricted from, offering such services, with sufficient capacity to serve the marketplace that will require them. Consequently, the concerns set forth in this letter reflect MobileVision's belief that any rules adopted by the Commission foster those goals by continuing the basic regulatory scheme of the Interim Rules with regard to band allocation, and providing an operating environment for LMS systems that does not undermine their economic viability (either by failing to provide sufficient protection against interference to assure satisfactory accuracy, by failing to recognize the need to offer broad services in order to achieve public acceptance or by failing to assure that systems have sufficient capacity to permit competitive pricing of the service). To do otherwise would be counter to the overriding objectives of IVHS.

With regard to the Teletrac submission, it is nothing less than astounding. Teletrac filed a Petition on May 28, 1992 ("Petition"), initiating this proceeding, seeking the adoption of "permanent rules governing [LMS] systems operating in the 904-912 MHz and 918-926 MHz [bands]" (Petition, p. 1). In its Petition, Teletrac stated:

"Without permanent rules that minimize the interference generated by co-channel [LMS] systems operating in this band, the scarce spectrum available for this service increasingly will be used inefficiently." (Petition, p. 2).

During the almost two years since, Teletrac has vigorously advanced its position that wideband pulse ranging LMS require co-channel exclusivity, through numerous filings of Comments, Oppositions, Reply Comments, Technical Appendices, and Affidavits in support of its Petition and in response to the Commission's NPRM, as well as through its many ex parte communications and submissions to the staff. While there have been numerous differences in the particulars of MobileVision's and Teletrac's

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positions, MobileVision has consistently supported the essence of Teletrac's initial Petition and its subsequent filings with regard to the need for technically sound rules that insure that LMS services can be provided without destructive interference.

Now, Teletrac would rather have the Commission provide for only one 10 MHz band allocated to wideband pulse ranging LMS systems, on a "shared" basis, and not surprisingly only on the same frequencies for which Teletrac's system has been licensed and engineered (as opposed to those frequencies on which all of its potential competitors have been licensed and for which their systems are being, or have been, designed). The "sharing" that Teletrac suggests is, by their own admission, only capable of accommodating one (1) other competitor in each market. To the extent that the Commission believes that the number of licensees in each market defines competition in itself, which MobileVision does not for reasons set forth below, the Teletrac proposal does not even provide for more than the two licensees provided for in the Interim Rules and in Teletrac's initial Petition. Yet that proposal would cannibalize the bandwidth to the detriment of spectral efficiency, capacity and service capability. Moreover, Teletrac urges the adoption of rules that are specifically designed to Teletrac's own intended use of forward link and ancillary services, a limited use inconsistent with market needs.

While MobileVision intends to provide detailed technical comments regarding Teletrac's submission, it must be immediately pointed out that Teletrac's proposal is technically flawed in many respects. As just an example, according to the emissions table provided in Teletrac's submission, mobile units will be able to emit pulsed narrowband signals, pulsed wideband spread spectrum signals and emergency voice transmissions in Teletrac's proposed location band. As another example, Teletrac proposes that this location band be shared on a one (1) second time sharing basis, which would result in a two (2) second delay between voice transmissions. Such a delay is unacceptable, especially in the emergency situations contemplated for these services, and poorly utilizes the bandwidth. As indicated, MobileVision will fully review and detail the technical deficiencies of this proposal and provide the Commission with its comments in that regard.

But Teletrac's submission is more than simply technically flawed, it abruptly abandons the truth of all Teletrac's previous positions (too numerous to list in detail in

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this letter) on the core issues in this proceeding, effectively disclaiming without explanation its own technical testimony and discarding that of its well known and respected experts. In this proceeding, for example, Teletrac submitted a lengthy report by Professor Raymond Pickholtz ("Engineering Analysis of Cochannel Pulse-Ranging LMS Systems," dated June 28, 1993) that opposes the very type of time sharing scheme that Teletrac now proposes for a variety of reasons including the inefficient use of spectrum that would result. Teletrac has provided no technical explanation for its change of position on this critical issue.

An examination of the practical effects of Teletrac's current submission and the current state of the industry may shed some light on why Teletrac has reversed its position. Teletrac and MobileVision possess the only fully developed wideband pulse ranging systems: Teletrac's is in service in six markets and MobileVision has the system infrastructure in place in three markets and is currently poised to fully deploy its systems after the completion of a capital infusion which is imminent. The other two potential providers appear to require either adaptation of foreign developed systems on different frequencies or, by their own admission, are at least a year away from deployment.

Teletrac has publicly reported that it has experienced limited commercial success in its initial markets, which MobileVision has been advised by prospective customers of both companies reflects the failure of Teletrac's system to provide the range of capabilities that the marketplace demands. For example, Teletrac does not currently provide voice and data capability with its location service. MobileVision has been advised that, in response to that clear market need, Teletrac is currently re-engineering its systems to provide voice capability. While Teletrac does so, it would have the Commission prevent or hinder others from encroaching on its markets by urging rules designed to fit only its system. Indeed, as Teletrac has been advised, the adoption of its proposal would require MobileVision to re-design its system, a system fully developed in reliance on existing rules and ready for deployment in markets in which it would compete head on with Teletrac.

The remarkable, but natural and inevitable, consequence of adopting Teletrac's submission will be the creation of a monopoly in wideband LMS systems for Teletrac for years to come. But not only will the public be harmed by the absence of competition, it will be precluded under Teletrac's submission

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from receiving the IVHS and other services the market demands and which MobileVision's technology is today capable of delivering. It cannot be that Teletrac is unaware of these consequences. Obviously, those consequences are to be avoided.

Any rules adopted in this rulemaking should be designed instead to encourage innovative quality service to the public now that will advance the aims of IVHS and information interconnectivity in a competitive environment. True competition from the user's viewpoint is not defined by how many wideband pulse ranging licensees are operating in a geographical marketplace but rather by how many alternative (and to some extent substitutable) technologies exist in a geographical marketplace that are commercially viable and offer valuable services subject to price and service competition.

The Commission's objective is, MobileVision believes, to offer users the widest array of location capable services, with different ranges of capability at different cost bases. Today, that range includes dead reckoning, global positioning satellites ("GPS"), tag readers and wideband pulse ranging systems. Cellular also performs location functions when combined with GPS or to the extent the vehicle occupant can identify its (or his or her) location. Each of these services offers a different degree of accuracy, and normally can be coupled with other services. Not all are appropriate for each need that location services attempt to meet. (For example, dead reckoning may be helpful for stolen vehicle recovery but is useless in fleet monitoring and scheduling services; cellular may be helpful (if not as accurate) in emergency roadside service but useless in stolen vehicle recovery.)

User selection of accuracy and service capability will also obviously consider cost. While wideband systems such as MobileVision's can offer voice communications ancillary to location, they cannot compete with cellular on a per call cost (nor do they have the capacity to compete for such service). If accuracy is not paramount and only stolen vehicle service is important, dead reckoning may be the cheapest satisfactory alternative. If high volume voice and location are both desired, a cellular phone with a GPS (or wideband) device may be the choice. In this mix, wideband pulse ranging LMS systems can offer superior accuracy in all environments and can provide ancillary communications capability in response to market requirements, but not if vague or inefficient sharing concepts

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undermine the marketability of such service and thereby deter capital investment and system deployment. Teletrac's proposal would have just such a result and would thus deprive the marketplace of technically capable and economically viable competitors.

Indeed, Teletrac's proposal appears singularly designed to allow it to provide service to one market segment, primary emergency roadside service, rather than to the range of broader public requirements for IVHS and other services. Both Teletrac and MobileVision are pursuing arrangements with national accounts, including automobile manufacturers, for incorporation of their equipment in connection with servicing customers and needs of those accounts. Teletrac's technical proposal would provide it with the bare minimum to remain eligible in that competition but as designed would preclude MobileVision from competing with it for that national account. Teletrac's submission regarding emergency voice, which appears designed for this singular purpose, would also preclude MobileVision and others from serving other important market needs. As a result of the technical and capacity restrictions Teletrac proposes, neither MobileVision nor others could effectively offer services competitive to other segment providers in the location markets, such as GPS. But neither Teletrac nor any other prospective LMS provider will be successful in the competition to provide location related services if they cannot offer services that address these market needs. The result will be, if Teletrac's proposal is adopted, that, contrary to the Commission's specific intention, IVHS services will not be provided by wideband LMS service on the 902-928 MHz spectrum that is the subject of this rulemaking.

The Teletrac submission is not the only concern of MobileVision. During the course of this proceeding, a subject not raised for comment in the NPRM has engendered questions that MobileVision does not believe are properly part of the proceeding but which nevertheless now may require clarification. The Interim Rules in existence for twenty years, and upon which MobileVision and others have relied in their very substantial development efforts, authorized not only two 8 MHz bands for pulse ranging systems but also voice and data communications in conjunction with providing LMS, then AVN, services. Restrictions on the scope of such communications was not a matter of dialogue or interpretation by the Commission in the past and, MobileVision submits, appropriately so.

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As the Commission must be acutely aware, the public must have access to the broadest capability of these systems, including high capacity voice and data transmission, if the national goals associated with information flow and IVHS are to be adequately met. MobileVision has previously addressed these capabilities and the market demand for them, as well as the need for systems to provide such communications on an essentially unrestricted basis if LMS systems are to be economically viable. It is important to note that LMS systems, however, are not designed and will not compete with cellular systems in providing such services. Even if voice and data services are provided on an unrestricted basis to support IVHS goals and LMS market needs, LMS systems do not have the capacity to compete with cellular systems. When the primary requirement of a licensed service is location and IVHS related, however, LMS providers should not be placed at a disadvantage in competing for such location and IVHS related service with cellular systems, linked with GPS or with other location systems, that possess those needed voice and data capabilities.

To the extent that the use by LMS of such communications causes any technical concerns at the Commission regarding the compatibility of such communications use with other LMS providers or with those with primary use of the allocated bands (such as the Federal Government or ISM users), MobileVision believes that such concerns are misplaced and it will address them in conjunction with its technical comments on the Teletrac submission.

To assure the creation of a competitive environment in which necessary services, including ancillary voice and data communications, are available to the public without critical interference among LMS providers, wide or narrow band, and to further the other objectives of the NPRM, MobileVision intends to communicate with other prospective wideband LMS providers to seek an industry consensus that does not create a technical chimera of false sharing. Within the technical needs for strict non-interference and sufficient capacity, the attempt to build such a consensus may include such other approaches as mandatory sub-licensing for resellers on protected licensed systems. To be successful in offering real and valuable services, it must include the ability to offer full voice and data capability. MobileVision will report to the Commission on its efforts and any alternative proposals that may result as soon as possible.

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MobileVision recognizes that the Comments and communications to the Commission regarding this proceeding are replete with contradictory and often incomplete technical statements and assertions. It believes that the confused technical record may lead to consideration of rules that contain misplaced belief in the ability of LMS systems to "share" when, in fact, proposals, such as Teletrac's, urging "solution" are not only unworkable but in reality are anticompetitive. Similarly, perceived concerns about the impact of voice and data communications on other users entitled to protection from interference emanate from the absence of any technical record on that issue.

To eliminate that confusion and insure the technical soundness of any Final Rules, MobileVision urges the Commission to hold an informal technical meeting of the appropriate Commission personnel and the engineering and design expertise of the LMS providers to establish, through industry exchange and peer scrutiny, the type of full technical record on which the future of the LMS industry rules should rest. MobileVision firmly believes that without a clearer technical record addressing the real impediments of time sharing and the essential requirements of protection from interference, the resulting rules will fail to achieve the objectives of the NPRM and the public will fail to receive the benefits of wideband LMS services.

MobileVision submits that Teletrac's current proposal should be rejected out of hand as anticompetitive and in variance with the technical submissions of its own experts. Since that proposal presents significantly different views and technical considerations than those previously in the record, MobileVision requests that the Commission take no further action in this proceeding until the potential LMS system providers, are afforded an opportunity for meaningful participation in the development of a balanced record by the submission of comments addressing the new Teletrac proposal. MobileVision should be able to review and more fully respond to Teletrac's proposal within two weeks.

MobileVision (and, for that matter, Teletrac) built its systems on one of two separate 8 MHz bands in reliance on Interim Rules existing for twenty years, in reliance on licenses granted under those Interim Rules, and in reliance on many pre-rule making communications with the Bureau regarding its intentions to design and build an 8 MHz system under the existing rules and the

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Commission's policies on protection from non-interference. Not only will it not serve the public interest to deprive potential LMS users of capable and viable systems that would compete with each other and with other technologies for location related services by wholesale (and technically unsound) revision of the existing licensing scheme, but it would be an unjust and unfair deprivation of years of efforts based on those reliances. Over \$50 million in investment has been made in the development of the MobileVision system, and investors are ready to invest the millions more that it will take to deploy the system on a nationwide basis. But the past investment will be wasted and the current investments will not be forthcoming, not to MobileVision nor to any other prospective LMS provider, if proposals as ill-conceived as Teletrac's are adopted. As a result, no wideband LMS provider will come forward in this spectrum capable of serving the public and IVHS needs. It would be far better for the industry and the public before that occurred that the Interim Rules merely be continued in place, as is, with only changes to provide interference protection mechanisms while the Commission let the market and industry define the needs further.

Sincerely,

REED SMITH SHAW & McCLAY



John J. McDonnell  
Marnie K. Sarver

JJM/agw  
Attachment

## IVHS FUNCTIONAL AREAS

**Advanced Traffic Management Systems (ATMS)** employ innovative technologies and integrate new and existing traffic management and control systems in order to be responsive to dynamic traffic conditions while servicing all modes of transportation.

Traffic management systems apply traffic engineering technologies to bring order and efficiency to the movement of highway vehicles. The concept of advanced traffic management systems (ATMS) refers to the merger of current and evolving traffic operations technologies and the application of those to both the highway and the vehicle. ATMS represents the "Smart Highway" with which the "Smart Vehicle" will communicate. It is the foundation upon which all other IVHS technologies rely.

**Advanced Traveler Information Systems (ATIS)** acquire, analyze, communicate, and present information to assist travelers in moving from a starting location to their desired destination.

A major component of ATIS is providing information to the driver of a vehicle. Without utilizing any support from outside the vehicle, ATIS can employ visual and auditory presentations to inform drivers of their current locations, aid them in planning their routes, help guide them to their desired destinations and provide various informational services. ATIS may provide communication between the vehicle and an Advanced Traffic Management System (ATMS) that provides continuous information to the driver regarding traffic conditions, roadway congestion, alternate routes, parking and other up to date information. Real time information could include locations of accidents, weather and road conditions, optimal routes, recommended speeds and lane restrictions.

Specific ATIS features and products include the following:

- Navigation systems with electronic vehicle or traveler position determination
- Data communication transceivers providing information to and receiving information from traffic management centers
- Route planning and guidance systems
- Automated vehicle identification (AVI) for transit vehicle tracking, tolls and verification
- Emergency (Mayday) services with signaling and response capabilities

**Advanced Vehicle Control Systems (AVCS)** combine sensors, computers and control systems in vehicles and in the infrastructure to warn and assist drivers or to intervene in the driving task. AVCS encompasses a broad range of products and systems. They have in common two unique features: Perceptual enhancement. AVCS will incorporate sensors to augment human eyes and ears. Those will give the driver a better sense of any impending danger and the general situation in and around the vehicle. Automated controls that are faster, more precise and more reliable than human reflexes.

**Commercial Vehicle Operations (CVO)** systems apply various IVHS technologies to improve the safety and efficiency of commercial vehicles and fleet operations. Commercial vehicles include trucks, delivery vans, inter-city buses and emergency vehicles. CVO systems increase safety, expedite deliveries, improve operational efficiency, improve incident response and decrease operational costs.

Technologies needed for CVO systems are:

- Automated Vehicle Identification (AVI)
- Automated Vehicle Classification (AVC)
- Automated Clearance Sensing (ACS)
- Weigh-In-Motion (WIM)
- On-Board Computer (OBC)
- Two-Way Real-Time Communications (TWC)
- Digital real-time traffic broadcasts
- Dynamic network routing and scheduling
- Roadside beacons

**Advanced Public Transportation Systems (APTS)** encompass the application of advanced electronic technologies to the deployment and operation of high occupancy, shared-ride vehicles including conventional buses, rail vehicles and para-transit vehicles.

Specific APTS features and products include:

- Mass transit and ride-sharing information
- Ride-matching information that allows flexibility to change arrangements on short notice even during travel

- Mass transit and ride-share devices that eliminate the inconvenience of exact change requirements
- Traffic control measures that provide preferential treatment for high occupancy vehicles
- Planning activities for fleet operations that are enhanced by a wide range of data availability
- Fleet operations that are optimized by the application of real-time monitoring
- Fleet control techniques that are flexible and responsive to user demands
- Fleet monitoring information that integrates computer assisted dispatching, customer information and passenger security
- Electronic data communications for mass transit fleets (replacing voice communications)
- Automated vehicle controls