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December 29, 1994

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
Washington, D.C. 20554

Re: *Ex Parte* Presentation
PR Docket 93-61 - Automatic Vehicle Monitoring

Dear Mr. Caton:

On behalf of Pinpoint Communications, Inc., this is in response to MobileVision's *ex parte* dated December 22, 1994, in which it continues to advocate an anticompetitive position designed to foreclose the deployment of systems such as that proposed by Pinpoint. For the reasons set forth herein, the Commission should reject MobileVision's efforts to secure exclusivity and freeze out potential competitors.

MobileVision has claimed that systems designed to employ more than 5.5 MHz bandwidth should be foreclosed by asserting that if "Pinpoint's shared band allocation were to be adopted, then no other LMS provider, with developed systems and ready to deploy, could operate and hence bid on that band." MobileVision seeks to prevent Pinpoint (and apparently Uniplex and any other licensee proposing to use approximately 8 MHz) from operating. Contrary to MobileVision's latest assertions, the record does not prove that sharing among wide-area systems is impractical nor contrary to the public interest. Nor does the record show that Pinpoint designed a system contrary to the Interim Rules. In fact, just the opposite is true as Pinpoint explained in its December 19, 1994, *ex parte*, Letter of Edward A. Yorkgitis, Jr., counsel for Pinpoint, to William F. Caton, Acting Secretary, FCC.[1] Moreover, if MobileVision must as a technical -- as opposed to a commercial -- matter have exclusivity, then it clearly misled the Commission by obtaining licenses for hundreds of sites under interim rules that require sharing.

Pinpoint has advocated a band plan that would make available one wide-area sub-band for those who claim not to be able to time share (but who may be able to

[1] A copy of the December 19 letter was hand delivered to counsel for MobileVision on the morning of December 20, 1994.

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share on some other basis or who alternatively would be willing to bid for exclusive spectrum) and one wide-area sub-band for those who claim to be able to time share. Pinpoint has also urged the Commission make the latter sub-band available on a co-primary basis with local area (e.g. tag) systems with sharing to be worked out on a height-power differential basis. To this end, Pinpoint has conducted testing with Amtech, the leading maker of tag systems. The results of those tests show that such sharing is feasible. Pinpoint's modified NPRM Band Plan would also make spectrum available in which there would only by local-area systems and Part 15 systems (even though Part 15 would continue to have access to the entire band).

As Pinpoint noted in its December 19 *ex parte*, both Teletrac and Southwestern Bell have at various times in this proceeding admitted that they could share spectrum with at least one other wide-area AVM system. Admittedly, neither Teletrac nor Southwestern Bell, however, has expressed an interest in time sharing nor has MobileVision. These parties should be given the opportunity to seek spectrum, but not at the expense of those who can time share. Uniplex, for example, has explicitly stated its belief that it can time share with Pinpoint.[2] Thus, two of the five system proponents in this rulemaking have stated that they can time share. Notably, these are the only two wide-area systems that have been developed without major contributions of capital from Bell operating systems.[3]

MobileVision claims that time-sharing has been discussed at length and is not feasible. In contrast, Pinpoint notes that time sharing has been *avoided* at length because it is eminently practical and merely not desired by systems with much smaller

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[2] Uniplex Ex Parte dated September 30, 1994, filed October 6, 1994.

[3] When this proceeding began, MobileVision was financed by Ameritech, although it appears that this relationship may no longer exist. AirTouch, which controls Teletrac, was spun off from PacTel earlier this year. The Teletrac technology appears to be imported from Tadiran of Israel. See Teletrac Ex Parte of December 7, 1994, which included a letter to William Goshay of Teletrac from Tadiran discussing steps Tadiran would have to take to change the operating frequency of the Teletrac base stations. Southwestern Bell has imported its technology from QuickTrack of Australia. While there should be no ban on imported technology, an allocation that effectively freezes out entrepreneurial domestic technologies that can share spectrum in favor of imported technologies would implement a questionable industrial policy while distorting sound allocations principles that would have the Commission foster the use of shared spectrum.

location capacity.[4] The arguments that have been offered by Pickholtz, the Virginia Tech Report, and MobileVision all depend upon

- a deliberate misstatement of the amount of intersystem coordination required for time-sharing,

- convincing the Commission that automatic vehicle monitoring systems with location capacity one or two orders of magnitude smaller than Pinpoint's deserve deference when determining which type of AVM systems are most in the public interest, or

- an assumption of lawlessness (i.e. noncompliance with rules and inter-licensee agreements) on the part of wide-area AVM systems that would frustrate successful operation by any wide-area systems.

As Pinpoint has stated and restated, a common timing signal and a schedule of access to the spectrum agreed to among co-channel licensees (or imposed upon the licensees by the FCC by default) is all that is needed.[5] The opponents of time sharing have never identified what in addition to these two elements is needed. Instead, they assert the *non sequitur* that all systems will eventually look the same under time sharing. (This is an amusing assertion when the vehicle location functions of the MobileVision and Teletrac systems look indistinguishable based on the record in this proceeding.) What the basis for this claim has been Pinpoint cannot ascertain and trusts that the Commission can see through its thinness. Moreover, this claim is belied by the fact that Uniplex, which has acknowledged the feasibility of time sharing, and Pinpoint employ different approaches to vehicle location.

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[4] If MobileVision were so adaptable as they claim, one would expect them to be able to take advantage of the same design tradeoffs as Pinpoint has to increase their capacity. Of course, this doesn't fit in with their plans to offer a PCS-like service. MobileVision's arguments that Pinpoint achieves its high capacity because of its system design plainly misses the mark. At bottom, MobileVision criticizes Pinpoint for designing its system in recognition of the probable interference environment that it would encounter and of the location capacity necessary for sharing in this, to date, shared band.

[5] If the sharing parties chose to have additional coordination in order to bring about greater efficiencies by permitting one another to use underutilized time slices, such arrangements could be worked out among the parties. Additional cooperation, however, is by no means essential to time sharing.

MobileVision's feeble arguments regarding efficiency essentially ask the FCC to overlook the considerably smaller capacity of other wide-area systems. The quote by MobileVision from the preliminary Virginia Tech Report in MobileVision's December 22 *ex parte* is a case in point. As Southwestern Bell Mobile Systems (SWBMS) noted in Exhibit B to its March 29, 1994, Reply Comments, its location bursts are "approximately one quarter of a second" (i.e. 250 milliseconds) in duration. (Compare with the 200 *microsecond* duration of location pulses on the Pinpoint system, and the 640 *microseconds* for a base-station-poll-mobile-location-pulse transaction.) Assuming, for the sake of illustration that, under a time-sharing arrangement, SWBMS received 0.7 seconds of access to airtime, it would only be able to transmit location bursts from two vehicles in each time segment (ignoring the possible use of CDMA overlay techniques). Ostensibly, 200 microseconds would be wasted in each time segment. Pinpoint, in contrast, would be able to complete 1093 vehicle locations with 480 *microseconds* wasted. This minimal waste from time sharing is a small price to pay for the increased competition -- and increased use of the spectrum -- that sharing would bring. Pinpoint also questions whether SWBMS, in a negotiation for access to the spectrum would accept 0.7 seconds of access. Rather, Pinpoint would expect SWBMS to act rationally and seek access to the spectrum for time segments more closely aligned with its operational parameters; in the above example, this would mean time segments that more closely approximate a multiple of 250 milliseconds.[6]

Finally, MobileVision alludes to Dr. Pickholtz's arguments with regard to enforcement burdens. These assume that a wide-area AVM system *cannot* control its mobiles within its own system *or* that systems can control vagrant operation within their systems but somehow cannot do so in a time-shared environment during time segments in which they do not have access to the spectrum. The invalidity of these absurd arguments has been discussed fully in the record.[7]

MobileVision blithely ignores the fact that Pinpoint designed its system to comply with the interim rules. These rules require sharing with both wide-area and

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[6] Other arguments have been made from time to time regarding the need for synchronous operation. As Pinpoint has explained, if a system has a large location capacity, it can set aside time slices to provide quasi-synchronous operation that will satisfy the needs identified by other parties for which synchronous operation is one way, but not the only nor the optimal way, given the realities of this shared band, to meet them.

[7] Pinpoint Reply Comments at 5 - 19 (July 29, 1994).

local-area systems.[8] Pinpoint can do both. It constructed an experimental system and tested with a local area system. The interim rules say nothing about a "narrowband forward link" or using spectrum in the opposite AVM sub-band for a forward link. Pinpoint designed its forward link to operate within the 8 MHz sub-band. Accordingly, Pinpoint, not MobileVision, designed its system within the constraints of the interim rules as written. Apart from a completely conclusory statement to the contrary on page 3 of its December 22 *ex parte*, MobileVision makes the unsupported and literally fantastic statement that because it, purportedly, designed its systems within the constraints of the interim rules, it is more able to redesign its system and adapt to new operating requirements. If MobileVision has to settle for 5.5 MHz, this will not affect its location function as it uses only 4 MHz for vehicle location.[9] Accordingly, it is hard to understand how MobileVision will spend millions of dollars to redesign its system. In any event, Pinpoint has demonstrated a willingness and ability to redesign its system as witnessed by its December 12 *ex partes* concerning operation in the middle of the band. However, this has nothing to do with the fact that its original system was designed consistently with the interim rules.

As to testing, the record makes abundantly clear that, contrary to MobileVision's assertion that only Pinpoint's wideband forward link is an issue for Part 15, the Part 15 interests were first concerned -- and *continue* to be concerned -- about the potential for wide-area AVM systems to invoke the hierarchy under the Commission's Rules so as to force interfering Part 15 systems off the air. This potential arose because of the wideband return links, which MobileVision and all other wide-area AVM proponents employ. The Part 15 Coalition clearly confirmed in its December 7, 1994, letter to Reed Hundt that it cared equally about testing of Part 15 interference to all wideband *return* links.[10] In other words, Part 15 wanted to have testing that involved all wide-area AVM systems. Indeed, the interest in testing of the wideband forward link is a recent phenomenon (since August of this year), whereas the interest in the wide-area AVM return links has been a focus of Part 15 concern for almost two years.

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[8] B.P. Oil Company, 8 FCC Rcd 7320 (1993), *app. pending sub nom* North American Teletrac and Location Technologies, Inc., d/b/a Pactel Teletrac; see also the Notice of Proposed Rulemaking in this proceeding, 8 FCC Rcd 2502 (1993).

[9] MobileVision Comments at 30 (June 29, 1993).

[10] Pinpoint's understanding of the testing was that it would also focus on the question of potential Part 15 interference to return links. Pinpoint Ex Parte of December 8, 1994, commenting on the December 7 Part 15 Coalition letter regarding testing.

MobileVision's simplistic assertion that the problem with the Pinpoint system is its short location bursts is another attempt to apologize for its own limited location capacity. As MobileVision should be aware, Pinpoint has indicated a willingness to aggregate the transmissions from its base stations within certain duty factor constraints that will, in effect, *lengthen* the Pinpoint transmissions so as to address the concerns raised by some Part 15 proponents.[11] Of course, to be superficially effective, Mobilevision's polemic requires it to overlook such minor details. It is also extremely important to know that tests of the wideband forward link were a mere *six days from completion* when the Part 15 community unilaterally canceled the tests. This undisputed fact is hard to reconcile with MobileVision's claims that testing of Pinpoint's wideband forward link would take "months" to complete. As explained in the Part 15 Coalition letter of December 7, 1994, the problem for the Part 15 industry leading to the cancellation was that MobileVision and other wide-area AVM interests apart from Pinpoint were, according to the Coalition, not planning to participate in testing involving return links.

Contrary to the approach of MobileVision, which is to offer a voice communications system that will provide AVM as an *entree* into the 902-928 Mhz band, Pinpoint has designed an AVM system that will offer data on an incidental basis in short bursty messages,[12] as required by the current rules and proposed in the *NPRM*. Thus, MobileVision's criticism of Pinpoint's use of the wide-band forward link because of data capacity is disingenuous and self-serving.

Finally, whether a system can be redesigned is a distinct question from whether as a public policy matter rules should be adopted that require a radical redesign. Further, not all redesigns are equal. If a system, such as Pinpoint's, has been designed to achieve the location capacities and location accuracy necessary for IVHS applications, then it is not necessarily in the public interest for rules to be adopted that require it to accept considerably less capacity and worse location accuracy or, worse yet, to force it out of business entirely.

It is Pinpoint, not MobileVision, that has recommended a band plan that better accommodates a variety of technologies including the local area technologies and still leaves an opportunity for wide-area AVM developers and municipalities to enter the band on a shared spectrum basis. Should the Commission find it in the public interest

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[11] Pinpoint Ex Parte to Commissioner Ness, December 13, 1994.

[12] Because the ARRAY™ system will not be used for lengthy communications, as MobileVision plans to do, the duty factors that Pinpoint has described earlier will be achieved.

to auction a sub-band from 904 to 909.75 MHz, it also should make available the spectrum from 919.75 to 927.75 MHz for shared access and place the obligation on those who would use the band to work out their sharing arrangements. The Commission should not impose mutual exclusivity where none must exist. Indeed, Section 309(j)(6)(E) of the Communications Act sets forth the rule of construction of the auction provisions of the Act by warning that

> nothing in this subsection, or in the use of compulsory bidding, shall be construed to relieve the Commission of the obligation in the public interest to continue to use engineering solutions, negotiation, threshold qualifications, service regulations, and other means in order to avoid mutual exclusivity in application and licensing proceedings.

Having promoted a short-sighted (or differently-sighted), low-capacity AVM technology for which sharing may be commercially difficult, MobileVision would now have the Commission mandate mutual exclusivity and foreclose those technologies that can share spectrum. Such a decision would run counter to sound allocations policy.

An original and one copy of this presentation are being filed as required by Section 1.1206(a)(1) of the Commission's rules.

Respectfully,

David E. Hilliard

David E. Hilliard
Edward A. Yorkgitis, Jr.

Counsel for Pinpoint Communications, Inc.

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